environmental management

saunders havill group

Grampian Drive Deebing Heights Residential Development

EPBC Act Referral

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16 December 2015
7812

surveying town planning urban design environmental management landscape architecture

Referral of proposed action

Project title: Grampian Drive Deebing Heights Residential Development

1 Summary of proposed action

1.1 **Short description**

Response 1.1
The subject site is proposed to be developed for residential uses with recreation areas, roads, infrastructure and an environmental area preserving Deebing Creek.

1.2 **Latitude and longitude**

Id	Longitude (East)	Latitude (North)	Id	Longitude (East)	Latitude (North)
1	27°41'6.433"S	152°46'42.175"E	14	27°40'51.187"S	152°45'38.78"E
2	27°41'16.762"S	152°46'40.284"E	15	27°40'52.314"S	152°45'54.565"E
3	27°41'11.676"S	152°46'5.288"E	16	27°40'53.299"S	152°45'55.088"E
4	27°41'20.561"S	152°46'3.67"E	17	27°40'53.755"S	152°45'56.146"E
5	27°41'17.932"S	152°45'46.287"E	18	27°40'53.763"S	152°45'57.258"E
6	27°41'17.093"S	152°45'46.452"E	19	27°40'53.485"S	152°45'59.206"E
7	27°41'8.224"S	152°45'37.329"E	20	27°40'53.52"S	152°45'59.794"E
8	27°40'57.802"S	152°45'29.624"E	21	27°40'53.132"S	152°46'2.089"E
9	27°40'56.302"S	152°45'29.45"E	22	27°40'53.306"S	152°46'3.519"E
10	27°40'55.005"S	152°45'30.836"E	23	27°40'53.849"S	152°46'7.35"E
11	27°40'54.196"S	152°45'32.561"E	24	27°40'56.524"S	152°46'18.959"E
12	27°40'51.889"S	152°45'34.961"E	25	27°40'58.48"S	152°46'24.936"E
13	27°40'51.238"S	152°45'36.732"E	26	27°41'1.381"S	152°46'31.668"E

1.3 **Locality and property description**

Response 1.3
Contextually, the site is located directly south of the Centenary Highway, approximately 5 km south of Ipswich City. The Ripley Valley is one of the largest growth areas in Australia and in recent years has undergone significant development in accordance with the *Ripley Valley Urban Development Area Development Scheme* (UDADS). The site is bounded on all sides by roads or proposed or current residential developments and contains areas previously cleared for agricultural and mission related activities and regrowth and remnant vegetation areas. Large portions of land immediately surrounding the site has been cleared of vegetation values for pastoral purposes and is also slated for urban development under the UDADS. These adjoining projects already retain EPBC Act determinations for development. Significant residential developments have been completed adjoining the south-western property boundary and approximately 1 km north west and 2 km north east of the site. Nearby features include Ipswich City and the suburbs of Yamanto and Deebing Heights and the Flinders Goolman Conservation Estate 4 km to the south.

The referral area covers approximately 112 hectares. Refer to **Figure 1** for the site context and **Figure 2** for the site aerial.

1.4 **Size of the development footprint or work area (hectares)**

Response 1.4
The allotment containing the proposed development site covers approximately 116 hectares to the north and south of the Centenary Highway, with the referral area of approximately 112 hectares in size on the southern side.

1.5 **Street address of the site**

Response 1.5
Lot 218 on SP283121 – 152-280 Grampian Drive, Deebing Heights

1.6 **Lot description**

Response 1.6

Lot Number	Allotment Area	Referral Area	Tenure
Lot 218 on SP283121	115.639 ha	112 ha	Freehold

1.7 **Local Government Area and Council contact (if known)**

Response 1.7
LGA: **Ipswich City**
Contact: **Brett Davey**
Team Coordinator (Development) West Team
Ipswich City Council
Ph: 07 3810 6258
Email: bjdavey@ipswich.qld.gov.au

1.8 **Time frame**

Response 1.8
The subject site has a development approval issued to the previous owner by the **Ipswich City Council** prior to the designation of the PDA, and a revised development is currently in the decision assessment phase with **Economic Development Queensland**. Once approvals are in place and EPBC Act considerations complete, the project will commence. This is anticipated to occur in 2016 with a construction, sales and operational currency of 10 years.

1.9	**Alternatives to proposed action**	**X**	**No** The site has been strategically designated by the Queensland Government and **Ipswich City Council** as part of the *Ripley Valley Urban Development Area*. The referral area is located adjacent to the junction between Grampian Drive and the Centenary Highway, which provide efficient and effective access to and egress from the proposal site. The site will also be serviced by the proposed Springfield to Ipswich Rail Corridor extension aligned with the Centenary Highway. This infrastructure has been put in place in anticipation of the expansion of the Ripley Valley area. An alternative location is not feasible within the extent of the proponent's land holdings.
			Yes, you must also complete section 2.2
1.10	**Alternative time frames etc**	**X**	**No** There is an increasing need for essential urban development in strategically located areas within the designated south-western corridor. An alternative timeframe for the proposed action does not suit this need.
			Yes, you must also complete Section 2.3. For each alternative, location, time frame, or activity identified, you must also complete details in Sections 1.2-1.9, 2.4-2.7 and 3.3 (where relevant).
1.11	**State assessment**	**X**	**No** The project is not subject to a state environmental impact assessment.
			Yes, you must also complete Section 2.5
1.12	**Component of larger action**	**X**	**No** The action is not part of larger action.
			Yes, you must also complete Section 2.7
1.13	**Related actions/proposals**	**X**	**No** The action is not related to any other actions or proposals. Although adjoining properties have been or are in the process of referral, they are not owned and cannot be controlled or influenced by the proponent.
			Yes, provide details:
1.14	**Australian Government funding**	**X**	**No** The proponent has not received funding from the Australian Government to undertake the project.

			Yes, provide details:
1.15	**Great Barrier Reef Marine Park**	**X**	**No** The proposed action is not located inside the Great Barrier Reef Marine Park.
			Yes, you must also complete Section 3.1 (h), 3.2 (e)

2 Detailed description of proposed action

2.1 Description of proposed action

Response 2.1
The proposed action is for a residential development ideally located adjoining the Centenary Highway and Grampian Drive intersection in the Ripley Valley Priority Development Area (RVPDA), one of the fastest growing urban regions in Australia. The area is currently serviced by major arterial road connections and planning includes the proposed Springfield to Ipswich extension to the commuter rail line to augment the Ripley Town Centre regional hub to the north-east of the referral site.

The development layout for the referral site will be broadly guided by the approved RVPDA Structure Plan (**Plan 1**), which designates Deebing Creek and the adjoining vegetated corridor running south to north through the centre of the site as 'Open Space' and the balance lands as 'Residential Neighbourhood'. The layout of the residential areas will be guided by accepted planning principles that incorporate open space areas as linkages for active transport and recreation and local fauna connectivity values. Of note, the PVDA Structure Plan includes extensive areas set aside as 'Conservation' to the south that do not encroach upon the proposed referral area that is designated for urban development (**Plan 1**).

As such, the proposal layout is not yet finalised and the following impact summary is based purely on RVPDA Structure Plan designations. In terms of environmental impacts and potential impacts on *Matters of National Environmental Significance* (MNES), the action can be described as:

a) Removal of remnant vegetation, the majority of which is Least Concern
b) Removal of Koala food trees
c) Earthworks linked to creating grades to support roads, new allotments and drainage patterns
d) New and expanding infrastructure to support the creation of residential, commercial, business and open space uses
e) Establishment of hard stand areas on former rural land
f) Expansion of surrounding land uses by increasing the population, which will increase the number of domestic pets and potential exotic garden plant species

Refer to **Plan 1** for the RVPDA Structure Plan on which the development layout will be based.

2.2 Alternatives to taking the proposed action

Response 2.2
Not applicable. Refer to Response at 1.9.

2.3 Alternative locations, time frames or activities that form part of the referred action

Response 2.3
Not applicable. Refer to Responses at 1.9 & 1.10.

2.4 Context, planning framework and state/local government requirements

Response 2.4
Context
The Ripley Valley Priority Development Area was declared by the **Department of State Development, Infrastructure and Planning** on 8 October 2010 and covers a total area of 4680 hectares in the Ripley Valley of South East Queensland.

Planning Framework

The subject site is located within the **Ipswich City Council** Local Government area, situated within South East Queensland. The project is subject to the provision of the *Ipswich Planning Scheme*, in particular, the Ripley Valley Master Planned Area Structure Plan, as well as Queensland's *Sustainable Planning Act 2009* (Qld). Further, planning is guided by the *Ripley Valley Urban Development Area Development Scheme* as implemented by **Economic Development Queensland.**

Current Approvals

Preliminary Material Change of Use Approval – 5194/08.

2.5 Environmental impact assessments under Commonwealth, state or territory legislation

Response 2.5

Not applicable. Refer to Response at 1.11.

2.6 Public consultation (including with Indigenous stakeholders)

Response 2.6

As part of the previous development assessment process for the MCU Preliminary Approval, the proponents were required to provide notification of the project and seek public comment. It is anticipated that the new proposal will likewise be required to undertake similar notifications.

The proposed development is covered by a *Cultural Heritage Management Agreement* (CHMA) between the proponent, **Jagera Daran Pty Ltd** and the Jagera people. Further investigations and surveys will be carried out under the terms of, and all works on the site will comply with, the CHMA.

2.7 A staged development or component of a larger project

Response 2.7

Not applicable. Refer to Responses at 1.12 & 1.13.

3 Description of environment & likely impacts

3.1 Matters of national environmental significance

3.1 (a) World Heritage Properties

Description

NOT APPLICABLE (refer to **Attachment 1**).

Nature and extent of likely impact

NOT APPLICABLE

3.1 (b) National Heritage Places

Description

NOT APPLICABLE (refer to **Attachment 1**).

Nature and extent of likely impact

NOT APPLICABLE

3.1 (c) Wetlands of International Importance (declared Ramsar wetlands)

Description

NOT APPLICABLE (refer to **Attachment 1**).

Nature and extent of likely impact

NOT APPLICABLE

3.1 (d) Listed threatened species and ecological communities

Description

MNES Desktop Assessment
The Protected Matters Search Tool (PMST) using a 2 kilometre radius around the site identified the following matters protected under the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) as having potential to occur on site:

- 3 Threatened Ecological Community (TEC):
  - Lowland Rainforest of Subtropical Australia (critically endangered) - community may occur
  - Swamp tea-tree (*Melaleuca irbyana*) Forests of South-east Queensland (critically endangered) - community likely to occur
  - White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (critically endangered) - community likely to occur
- 6 listed threatened flora species
- 18 listed threatened fauna species
- 17 listed migratory & marine species

Table 1 provides a summary of these search results, with the full search results provided in **Attachment 1**.

Table 1: EPBC Act Protected Matters Search Tool Results

Listed Threatened Ecological Communities		
Name		**Status**
Lowland Rainforest of Subtropical Australia		Critically Endangered
Swamp Tea-tree (*Melaleuca irbyana*) Forest of South-east Queensland		Critically Endangered
White Box-Yellow Box-Blakely's red Gum Grassy Woodland and Derived Native Grassland		Critically Endangered
Listed Threatened Species		
Scientific Name	**Common Name**	**Status**
Birds		
Anthochaera phrygia	Regent Honeyeater	Endangered
Botaurus poiciloptilus	Australasian Bittern	Endangered
Dasyornis brachypterus	Eastern Bristlebird	Endangered
Erythrotriorchis radiatus	Red Goshawk	Vulnerable
Geophaps scripta scripta	Squatter Pigeon (southern)	Vulnerable
Grantiella picta	Painetd Honeyeater	Vulnerable
Lathamus discolor	Swift Parrot	Endangered
Poephila cincta cincta	Black-throated Finch	Endangered
Rostratula australis	Australian Painted Snipe	Vulnerable
Turnix melanogaster	Black-breasted Button-quail	Vulnerable
Mammals		
Chalinolobus dwyeri	Large-eared Pied Bat, Large Pied Bat	Vulnerable
Dasyurus hallucatus	Northern Quoll	Endangered
Dasyurus maculatus maculatus (SE mainland population)	Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population)	Endangered
Petrogale penicillata	Brush-tailed Rock-wallaby	Vulnerable
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)	Koala (combined populations of QLD, NSW and the ACT)	Vulnerable
Pteropus poliocephalus	Grey-headed Flying-fox	Vulnerable
Plants		
Arthraxon hispidus	Hairy Joint Grass	Vulnerable

Bosistoa transversa	Three-leaved Bosistoa	Vulnerable
Notelaea ipsviciensis	Cooneana Olive	Critically endangered
Notelaea lloydii	Lloyd's Olive	Vulnerable
Phebalium distans	Mt Berryman Phebalium	Critically endangered
Thesium australe	Austral Toadflax, Toadflax	Vulnerable
Reptiles		
Delma torquata	Collared Delma	Vulnerable
Furina dunmalli	Dunmall's Snake	Vulnerable
Migratory & Marine		
Scientific Name	**Common Name**	**Status**
Anseranas semipalmata	Magpie Goose	Listed Marine Species
Apus pacificus	Fork-tailed swift	Migratory Marine Bird Listed Marine Species
Ardea ibis	Cattle egret	Migratory Wetlands Species Listed Marine Species
Ardea alba	Great Egret	Migratory Wetlands Species Listed Marine Species
Cuculus optatus	Oriental Cuckoo, Horsfield's Cuckoo	Migratory Terrestrial Species
Cuculatus saturatus	Oriental Cuckoo, Himalayan Cuckoo	Listed Marine Species
Gallinago hardwickii	Latham's snipe	Migratory Wetlands Species Listed Marine Species
Haliaeetus leucogaster	White bellied sea eagle	Listed Marine Species
Hirundapus caudacutus	White throated needletail	Migratory Terrestrial Species Listed Marine Species
Merops ornatus	Rainbow Bee Eater	Migratory Terrestrial Species Listed Marine Species
Monarcha melanopsis	Black faced monarch	Migratory Terrestrial Species Listed Marine Species
Monarcha trivirgatus	Spectacled monarch	Migratory Terrestrial Species Listed Marine Species
Montacilla flava	Yellow Wagtail	Migratory Terrestrial Species Listed Marine Species
Myiagra cyanoleuca	Satin flycatcher	Migratory Terrestrial Species Listed Marine Species
Pandion haliaetus	Osprey	Migratory Wetlands Species Listed Marine Species
Rhipidura rufifrons	Rufous fantail	Migratory Terrestrial Species Listed Marine Species
Rostratula benghalensis s.lat.	Painted snipe	Listed Marine Species

A review of specific habitat niches and distribution of these listed flora and fauna species and TECs using the SPRAT database, Queensland's Wildlife Online Search Tool, previous reporting in the local area and Queensland's Regional Ecosystem and Essential Habitat mapping ruled out the potential for most of these listed matters to occur. This was primarily due to the combined impacts from:

- The relatively disturbed nature of the site;
- Lack of suitable niche habitat across the site, such as large undisturbed waterbodies, rocky outcrops and coastal habitats;
- Influences from surrounding rural-residential developments and expanding urban residential development within the local area;
- Fragmentation of the site adjoining the Centenary Highway and Grampian Drive;
- Evidence of dogs and exotic weeds throughout the site; and
- Disturbances caused by pastoral practices.

An assessment of likelihood of occurrence was conducted for threatened and migratory species listed in the PMST search results. This assessment was based on database and historical field report interrogations, presence or absence of suitable habitat, site features, results of the field surveys and professional judgement. Overall, the assessment identified the potential for Grey-headed Flying-fox (Vulnerable) and Koala (Vulnerable) to occur on-site due to the availability of potential habitat or food sources when eucalypts are flowering. In addition, the Rainbow Bee-eater (*Merops ornatus*) migratory species is considered a potential visitor to the site, however, the site is not considered ideal habitat for this locally common species. No other listed species or TECs are considered likely to occur on-site (refer to the Likelihood of Occurrence Schedule contained in **Attachment 2 – Appendix D**).

Assessment of Occurrence and Field Survey Results

The proposed residential development area has been subject to a number of on ground surveys by SHG and **SMEC Australia Pty Ltd** over preceding years to identify existing ecological values at the site (refer to **Attachment 2** – Ecological Assessment Report EPBC Act Referral). Specific studies include:

- Vegetation Assessment Surveys (June 2008)
- Flora and Fauna Assessments including GPS Tree Plot (April, May & June 2009)
- **SMEC** Ecological Assessment (September 2014)
- EPBC Act Flora and Fauna Assessments (June & July 2015)

Field assessments that occurred between 2008 and 2015 that included investigations of EPBC Act listed matters were conducted in support of the original development application and subsequent information requests. Of note, in June/July 2015, Senior Ecologists from **Saunders Havill Group** conducted field assessments across the site to specifically identify any potential MNES fauna or flora and conduct an assessment of suitable habitats on the application allotment, with a focus on Koala and Koala habitat.

Overall, the site was found to be relatively disturbed as a result of historical pastoral practices, which have left the proposed development area constituted of open cleared non-remnant areas and regrowth and remnant areas harbouring a weedy understorey. The following fauna specific assessments are based on the results of these studies.

Koala (*Phascolarctos cinereus*)

Conservation Status

Under the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act), Koala populations in Queensland, New South Wales and the Australian Capital Territory are listed as Vulnerable. Koalas are also listed as Vulnerable under Queensland's Nature Conservation Act 1992 (Qld) (NCA). The site is located within the modelled distribution of the Koala, within the 'coastal context,' as per the EPBC Act Referral Guidelines for the Vulnerable Koala.

Habitat

As described in the Koala SPRAT species profile, Koalas inhabit a wide range of temperate, sub-tropical and tropical forest, woodland and semi-arid communities dominated by eucalypt species. Under the Koala Referral Guidelines, Koala habitat is defined as 'any forest or woodland containing species that are known Koala food trees or shrubland with emergent food trees. This can include remnant or non-remnant vegetation in natural, agricultural, urban and peri-urban environments.'

Distribution

Koalas are endemic to Australia and have a known distribution from north-eastern Queensland to south-east South Australia. They are widespread within coastal and inland areas, however, densities of Koalas are higher within coastal areas with higher average annual rainfalls. South-east Queensland is known to support Queensland's highest density of Koalas.

Threats

The three main threats to Koalas have been identified within the SPRAT profile as:

- Habitat loss and fragmentation;
- Vehicle strike; and
- Predation by domestic or feral dogs.

In addition, the prevalence of disease such as the Chlamydia virus in many Koala populations has led to symptoms such as infections of the eyes, urinary tract, respiratory tract and reproductive tract, with the latter having the potential to lead to infertility in females. More recently, Koala Retrovirus (KoRV) has had an increasing impact on most Queensland Koala populations. While most Koalas carry the disease, environmental stresses such as poor nutrition and overcrowding lead to conditions caused by KoRV such as leukaemia and immunodeficiency syndrome.

Field Assessment

The ecological assessment undertaken by **SMEC** in 2014 recorded evidence of Koala activity on-site in the form of scats. In June/July 2015, Senior Ecologists from **Saunders Havill Group** conducted field surveys in accordance with EPBC Act Guidelines for the Koala across the site with weather conditions fine and sunny. The purpose of the survey was to determine the level of Koala usage across the site and to assess the availability of suitable habitat. The assessment involved the following methods:

- Spot Assessment Technique (SAT) developed by Phillips and Callaghan (2011)
- Habitat Assessments
- Opportunistic searches

SAT Survey Results

Overall, evidence of Koala usage in the form of scats varied from Low to Medium and, despite intensive searches, no Koalas were observed. Eighteen (18) SAT surveys were conducted across the site, as shown by the Field Survey Effort presented in **Attachment 2 – Figure 12**. As provided below in **Table 2** (refer to **Attachment 2 – Appendix E** for SAT data**)**, Koala usage in the form of scats was marginally skewed toward Low usage, with Medium usage recorded on the eastern side of Deebing Creek and toward the south-eastern property boundary. These estimates are taken from the **Australian Koala Foundation Koala** activity level classification table using the East Coast (med-high) Activity Category (**Table 3**). The East Coast (med-high) Activity Category is applicable in habitats dominated by residual, transferral or alluvial type landscapes considered med-high nutrient soils with good water holding capacity (Steve Phillips, personal communication). Chromosols and Dermosols are mapped across the application area and suit this landscape description (refer response 3.3(c) and **Attachment 2 – Section 3.6 & Figure 9**).

Table 2: SAT Survey Results

SAT Number	Evidence of Koala Use (%)	Koala Use (High / Medium / Low)
1	13.33	Low
2	10.00	Low
3	26.67	Medium
4	16.67	Low
5	16.67	Low
6	30.00	Medium
7	13.33	Low
8	6.67	Low
9	26.67	Medium
10	6.67	Low
11	6.67	Low
12	30.00	Medium
13	23.33	Medium
14	16.67	Low
15	10.00	Low
16	6.67	Low
17	6.67	Low
18	13.33	Low

Table 3: AKF Koala Activity Level Classification Table

ACTIVITY CATEGORY	LOW USE	MEDIUM (NORMAL) USE	HIGH USE
Area (density)			
East Coast (low)	< 9.47%	≥ 9.47% but ≤ 12.59%	> 12.59%
East Coast (med – high)	< 22.52%	≥ 22.52% but ≤ 32.84%	> 32.84%
Western areas (med – high)	< 35.84%	≥ 35.84% but ≤ 46.72%	> 46.72%

Habitat Assessment Results

Five of the 18 SATs recorded no Primary or Secondary Koala Food trees as classified for the **Ipswich City Council** region by the **Australian Koala Foundation** (extracted below), being entirely *Corymbia citriodora* (Spotted Gum) as indicative of Least Concern RE 12.9-10.2. The remaining 15 SATs contained Primary *Eucalyptus tereticornis* (River Red Gum) and/or Secondary *Eucalyptus crebra* (Narrow-leaf Ironbark) or *Eucalyptus melanophloia* (Silver-leaf Ironbark). The site therefore contains at least three recognised Koala Food Trees in woodland areas.

The extent of woodland on-site that is potential habitat for the Koala was mapped using ground-based verification of habitat characteristics and desktop aerial imagery analyses. From **Attachment 2 - Plan 1**, it is estimated that approximately 82 hectares of the site provides woodland that, although degraded, is suitable for Koala habitation.

Local Government Area	Elevation*	Scientific Name and/or subspecies	Common Name	Soil and Location
IPSWICH CITY	2-800	*E. biturbinata*	Grey Gum	slopes on soils of medium fertility, annual rainfall>1000 mm
IPSWICH CITY	2-1000	*E. crebra*	Narrow-leaved red ironbark, Ironbark, Narrow-leaved ironbark	well-drained shallower or sandy/sandy clay soils of medium fertility, >550 mm rainfall
IPSWICH CITY	2-800	*E. exserta*	Queensland peppermint, Yellow messmate, Messmate, Bendo	sandy drier soils on hills and stony rises
IPSWICH CITY	2-1000	*E. grandis*	Flooded Gum, Rose Gum	moist, fertile, well-drained, deep, loamy soils of alluvial or volcanic origin, 725-3500 mm
IPSWICH CITY	2-850	*E. major*	Grey Gum	wet coastal forests on soils of low to medium fertility
IPSWICH CITY	2-900	*E. melanophloia*	Silver-leaved ironbark	moderately fertile silts, loams, sandy clays on foothills
IPSWICH CITY	2-1200	*E. melliodora*	Yellow box, Honey box, Yellow ironbox	gentle slopes, foothills or on flats near watercourses. Soils include alluvials, loams and clays, frost and drought tolerant, 500-1400 mm
IPSWICH CITY	2-950	***E. microcorys***	**Tallowwood**	on slopes in deeper moderate to fertile soils, well-drained but moist
IPSWICH CITY	2-1050	*E. moluccana*	Coastal Grey Box, Grey box, Gum-topped box	loam soils of moderate to high fertility on coastal plains and ranges, tolerates saline soils
IPSWICH CITY	2-850	*E. propinqua*	Small-fruited Grey Gum	wet coastal forest on soils of low to medium fertility. Drought and frost tolerant
IPSWICH CITY	2-700	*E. resinifera ssp. hemilampra*	Red mahogany	sandy or well drained fertile soils, Drought and frost tolerant
IPSWICH CITY	2-200	*E. seeana*	Narrow-leaved Red Gum	poorly drained shallow soils, swampy sandy soils
IPSWICH CITY	2-700	*E. siderophloia*	Ironbark, Broken Back Ironbark	wet forest on soils of moderate fertility
IPSWICH CITY	2-800	***E. tereticornis ssp. tereticornis***	**Forest red gum, Blue gum, Red irongum**	alluvial soils, 600-2500 mm, tolerates salt-laden coastal winds, tolerates saline soils, medium-heavy clays, does not tolerate waterlogged soils

Bolded entries indicate primary tree species

Disturbance

Due to historical and ongoing pastoral practices, the site contained a fairly high abundance of invasive weeds declared under the Queensland *Land Protection (Pest and Stock Route Management) Act, 2002*, including *Asparagus plumosus* (Climbing Asparagus Fern), *Baccharis halimifolia* (Groundsel Bush), *Bryophyllum delagoense* (mother-of-millions), *Celtis sinensis* (Chinese Elm), *Lantana camara* (Lantana), *Opuntia tomentosa* (Prickly Pear), *Schinus terebinthifolius* (Broadleaved Pepper), *Senecio madagascariensis* (Fireweed), *Sporobolus pyramidalis* (Giant Rat's Tail Grass) and *Tecoma stans* (Yellow Bells). Other disturbances included significant vegetation clearing for pastoral purposes, creation of vehicle tracks, prevalence of dogs and impacts from surrounding land uses.

In general, the site was found to contain mostly relatively disturbed and degraded habitat unlikely to provide significant or unique habitat values to local Koalas. This is based on the relatively low abundance of primary Koala Food Trees and the prevalence of weeds within site vegetation.

Summary of Findings

The key findings from the field assessment are:

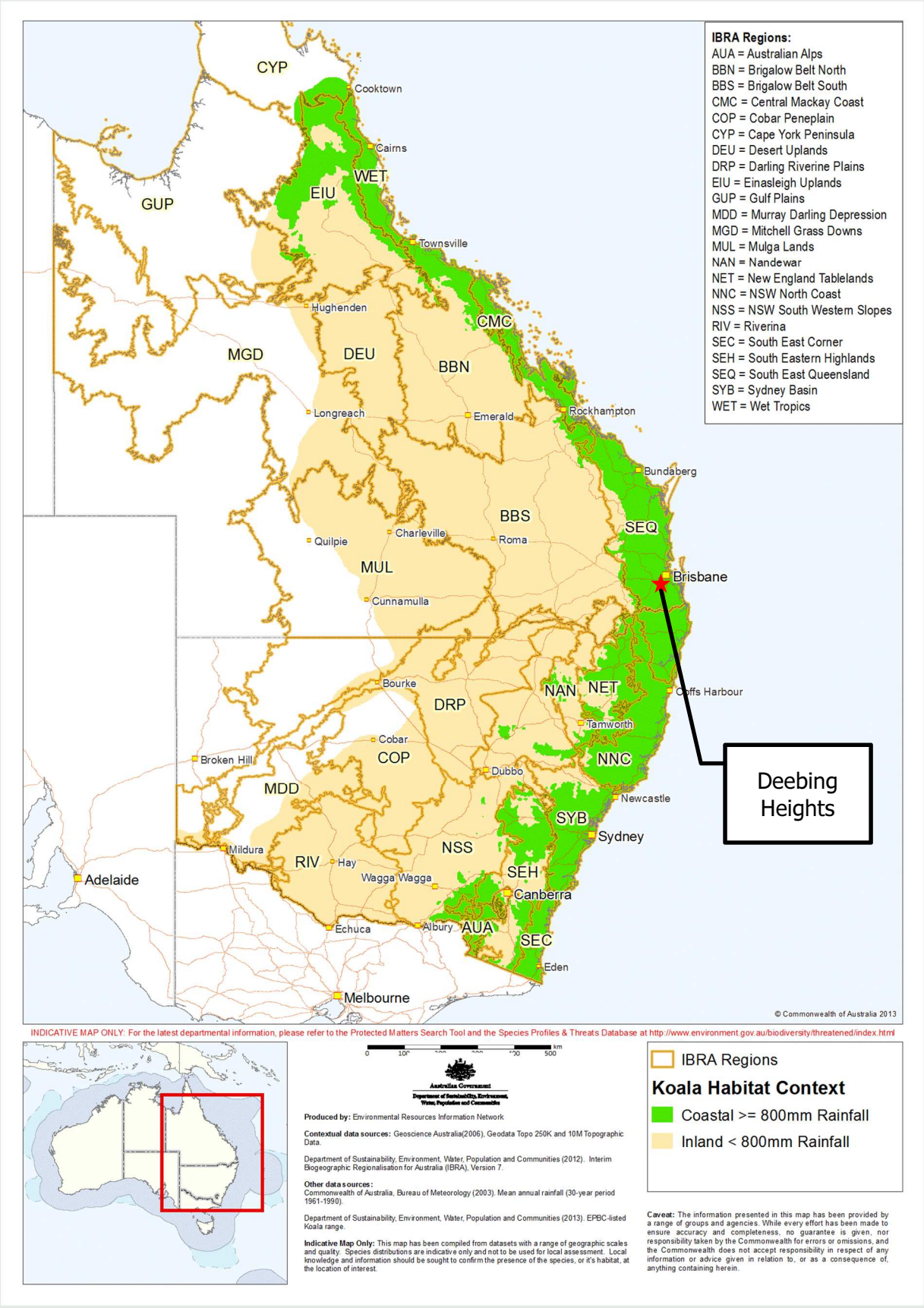
- No Koalas have been recorded on-site;
- Evidence of Koala usage remains present throughout the site;
- Large portions of the site are dominated by canopy species not listed by the AKF as Koala Habitat Trees;
- Overall, the site was significantly disturbed as a result of historical vegetation clearing and thinning, invasion of weeds, disturbance from livestock and impacts from surrounding land uses;
- The site is not considered to provide high quality habitat to Koalas.

The following analysis is an assessment against the EPBC Act Referral Guidelines for the Vulnerable Koala.

What is the geographic context of the proposal site?

A search of the EPBC Act Protected Matters Search Tool within a 2 km buffer lists the Koala as potentially located on-site (**Attachment 1**). As per the EPBC Act Referral Guidelines for the Vulnerable Koala, the site is therefore considered to fall within the modelled distribution of the Koala.

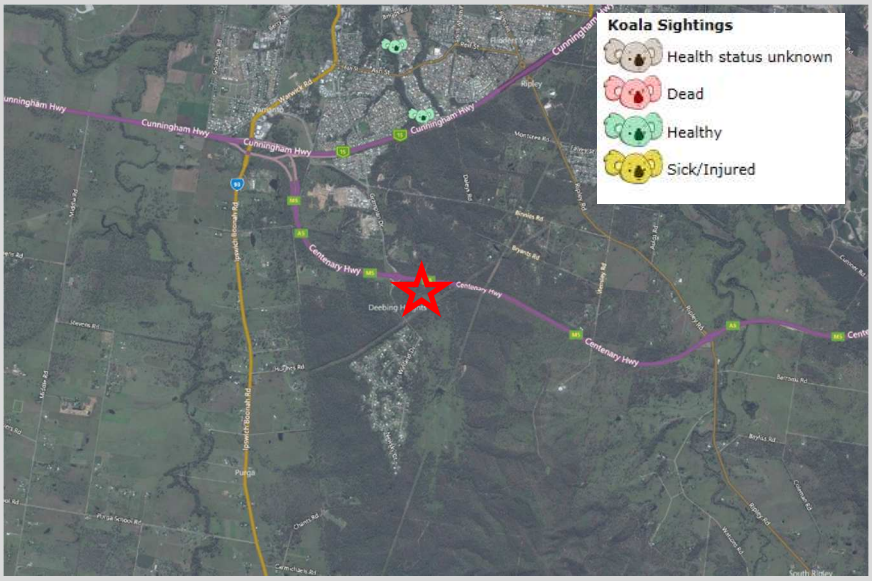
The Koala Referral Guidelines separate the geographical context into two zones, inland and coastal, based on the 800 mm per annum rainfall isohyet. The Grampian Drive site is mapped within a "coastal" area as per the distribution map (below). Therefore the coastal habitat attributes contained in the Koala Referral Guidelines are relevant when using the Habitat Assessment Tool.

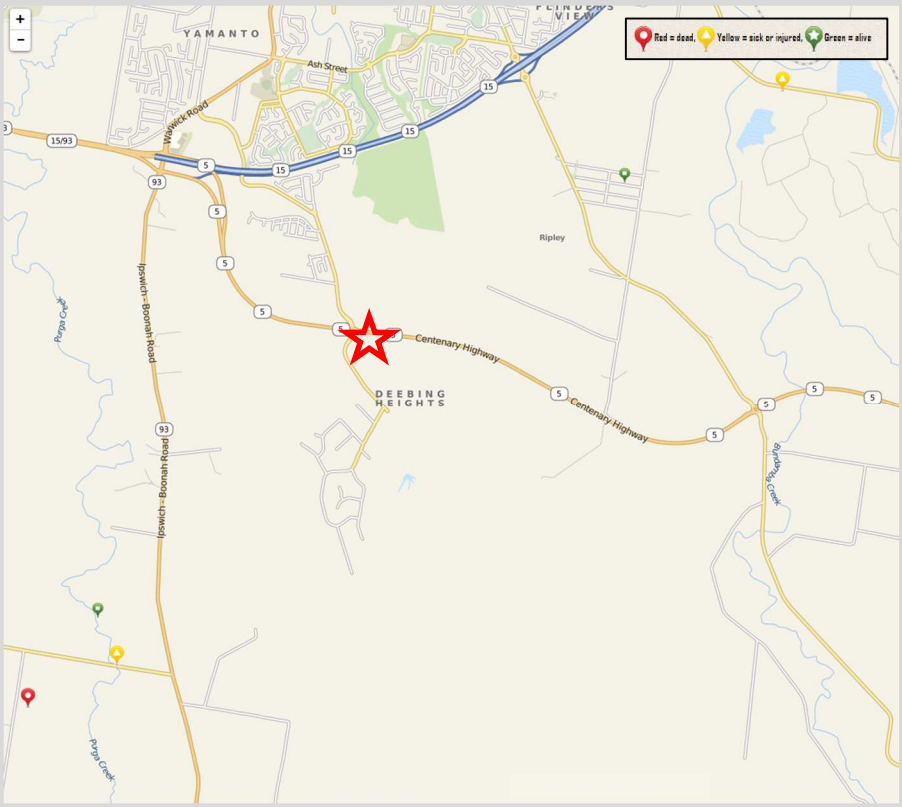


Does the site contain habitat critical to the survival of the Koala?
In accordance with the EPBC Act Referral Guidelines for the Vulnerable Koala, any habitat which receives a score of 5 or more using the Koala Habitat Assessment Tool is considered to be critical habitat. As shown by the Koala Habitat Assessments in **Table 4**, the Grampian Drive site has been given a habitat score of 6.

Table 4: Koala Habitat Assessment

Attribute	Score	Comment
Koala occurrence	+2 (high)	Desktop A Protected Matters Search with a 2 km radius of the site (**Attachment 1**) suggests there is potential for Koala occurrence in this area. A Wildlife Online search report using a 2 km radius found 18 records of the Koala (**Attachment 2 - Appendix C**). The dates of these sightings are unknown. There are no records of Koala on this site, however, Koalas are known to occur in the wider Ipswich City area.
		On-ground Evidence of Koala activity was recorded on the site between 2014 and 2015. **As there is evidence of one or more Koalas on-site within the last two years, the 'Koala Occurrence' attribute has been given a score of +2 (high).**
Vegetation composition	2 (high)	Desktop The Queensland Government Regulated Vegetation Supporting Map (Regional Ecosystem V8.0) identifies the study area as containing Category B Regulated Vegetation (**Attachment 2 – Figure 4**). Regional Ecosystems rectified on-ground via PMAV demonstrate that the majority of the site is mapped as Least Concern RE 12.9-10.2 that is not classified as 'essential habitat' for the Koala, with patches of Least Concern RE 12.3.7 adjoining gully lines and composite Of Concern RE 12.9-10.2/12.9-10.7 in the south-eastern portion of the site (refer to **Attachment 2** and Response 3.3(e) for Regional Ecosystem descriptions).
		On-ground This site contains known Koala Food Trees within the remnant and regrowth woodland areas. Primary and Secondary Koala Food Trees as classified by the **Australian Koala Foundation** for Ipswich City identified on-site include: Primary - *Eucalyptus tereticornis;* Secondary - *E. crebra, E. melanophloia, E. moluccana, E. seeana and E siderophloia*. The site is, however, dominated by canopy species that are note recognised as preferred Koala Food Trees. **As the zone contains a woodland with 2 or more known koala food tree species, the 'Vegetation Composition' attribute is given a score of +2 (high).**
Habitat connectivity	+1 (medium)	As per the Vegetation Composition response, the zone contains forest or woodland comprised of known Koala Food Tree species. While Deebing Creek does provide a naturally occurring corridor within the landscape, it forms a fragmented narrow lineal strip flanked by cleared grazing lands (**Figure 2**). The application area is bounded on all sides by current or future urban residential development, the Centenary Highway to the north and Grampian Drive to the

			west. **Plan 2** depicts the fragmented nature of the overall site location in relation to the Centenary Highway, Grampian Drive and the proposed Rail Corridor. It is noted that, given the already fragmented nature of the site, the proposal will not result in the further fragmentation of other connected habitat areas. It is recognised that Koalas require primary food trees for quality habitat at rates exceeding 50% in areas greater than 100 ha to persist (McAlpine et al. 2006). This zone provides relatively disturbed habitat with predominantly low proportions of Primary food trees suggesting it does not provide suitable habitat for ongoing Koala persistence. Lower quality habitat can play an important connectivity role if joining optimal Koala habitat (Januchowski et al. 2008), however, this property is mostly surrounded by rural enterprises and is bounded by major arterial roads and encroaching urban development and so provides limited connectivity value. This area displays tenuous connectivity to relatively vegetated areas to the south. However, it is noted that the relatively large adjoining properties to the south have gained federal approval for development, and those to the west are under construction, suggesting connectivity values are to be further compromised (**Plan 2**). **The site is unlikely to remain a tenuous part of a contiguous habitat landscape ≥ 500 ha and has been designated with a 'habitat connectivity' score of +1 (medium).**
Key existing threats	+1 (medium)		<u>Desktop</u>  **AKF Koala Map**



Koala Tracker Map

The **Australian Koala Foundation** Koala map (above) shows no Koala sightings in the immediate vicinity of the site, but two healthy Koalas have been recorded approximately 3 and 4 km north of the site in urban areas of southern Ipswich.

Koala Tracker is a crowd sourced National Koala sighting record. The Koala tracker map (above) shows one healthy Koala 4 km north east of the site, and another 5 km to the south west. Of note, a Koala injured by vehicle strike has been recorded approximately 4 km south west of the site on Purga Creek Road, and another sick Koala has been recorded near Swanbank power Station to the north east. The Koala death recorded south of Purga Creek Road was reportedly from sickness.

On-ground

The site is surrounded by rural and rural-residential properties frequented by dogs. The increasing level of vehicle use in the surrounding area and the expansion of adjoining EPBC Act approved residential development bringing with it an increased number of dogs and cars present significant threats of injury and death to Koalas. As surrounding residential development expands and encompasses the site, these threats are likely to increase in scale and intensity.

There has been one Koala injury recorded within 4 km of the site. While data showing the number of deaths or injuries to Koalas immediately adjacent to the site were unavailable, it can be inferred that the impacts of vehicle strike and dog attack are likely to cause death and injury to Koalas.

		As there is strong evidence of Koala mortality factors in the area and one injury recorded within 4 km of the study site, the 'Key Existing Threats' attribute has been given a score of +1 (medium).
Recovery value	0 (low)	The vegetation on the referral site is not considered to be important in achieving the Interim Recovery Objectives for the coastal context given its foundation on the ability to protect and conserve large connected areas of Koala habitat. Koala Context Attributes listed under Interim Recovery Objectives in Table 1 of the Guidelines for coastal areas are to: Protect and conserve large, connected areas of Koala habitat, particularly large connected areas that support koalas that are: • of sufficient size to be genetically robust or operate as a viable sub-population, or; • are free of disease or have a low incidence of disease, or; • are breeding. • Maintain corridors and connective habitat that allow movement of koalas between large areas of habitat. The site does not constitute a large connected area of Koala habitat, but rather an area of predominantly cleared and disturbed agricultural land surrounded by rural and urban development. Further, the site does not serve as a corridor or provide habitat connectivity due to largely to fragmentation by arterial transport corridors and encroachment by urban development. The Deebing Creek Riparian Corridor bisects the referral site and, although relatively degraded, has the potential to provide for tenuous connectivity throughout the mostly disturbed broader landscape, primarily as it drains to the north. Of note, the site is bordered by existing roads including the Centenary Highway and developments with EPBC Act approvals. As stated above, and shown in **Plan 2**, the site is heavily fragmented from vegetation patches within the broader landscape and has been selectively cleared of native trees. Overall, the severe fragmentation of the site to surrounding habitat areas and the lack of safe Koala movement opportunities to the site make it unlikely that the retention of the proposed development area will aid the Interim Recovery Objectives for the coastal context being achieved. It is noted that the project will not cause further fragmentation of surrounding habitat as the site is already relatively disconnected from these areas. In addition, the regional Koala population is not considered to be genetically diverse from other SEQ Koala populations, they are not free of disease (refer to previous response) and no evidence of breeding has been found on the site. It is generally understood that conservation and corridor areas provide most effective habitat value and connectivity when edge effects are minimised (Hill & Curran 2003). The subject site is partially bounded by arterial roads, does not adjoin a conservation area and is surrounded by rural and urban development and so is likely to suffer from increasingly debilitating edge effects. As such, within the broader landscape, the survey area is considered of negligible, if any, habitat and connectivity value for Koala dispersal, recovery and persistence.

		Overall, the increasing fragmentation of the site to surrounding habitat areas and the lack of safe Koala movement opportunities demonstrate that the retention of the proposed development area is not considered to aid the Interim Recovery Objectives for the coastal context being achieved. It is noted that the project will not cause further fragmentation of surrounding habitat as it is flanked by the Centenary Motorway and current or future urban development. **The 'Recovery Value' attribute has been given a score of 0 (low).**
Total	**6**	**As the habitat score is above 4, this site is considered to provide Critical Habitat for the Koala.**

Will the action adversely affect habitat critical to the survival of the Koala?
The above assessment concludes that the site contains areas of critical habitat. The Koala Referral Guidelines also require the adversity of impacts to be assessed. This process follows a "yes/no" flowchart as shown in the Guidelines (Figure 2), with responses provided below:

1. **Does your impact area contain habitat critical to the survival of the koala (habitat score ≥5).**

Yes, the critical habitat on-site received a score of 6.

2. **Does the area proposed to be cleared contain known Koala food trees?**

Habitat assessments conducted across the site found that canopy trees contain species that are considered to be Primary and Secondary Koala Food Trees.

3. **Are you proposing to clear ≤2 hectares of critical habitat?**

No. The total referral site area is approximately 112 hectares. However, approximately 30 hectares of the development site have been cleared of significant vegetation and habitat values and are not considered to constitute Koala habitat (**Attachment 2 – Plan 1**). Analysis against the PVDA Structure Plan demonstrates that 16 hectares of critical Koala habitat adjoining Deebing Creek is to be retained as 'Open Space' and is responsible for the continued connectivity of the site. As such, the remaining 'Residential Neighbourhood' designation makes up 66 hectares of critical Koala habitat (refer to **Plan 3** for critical habitat impact analysis). However, it is noted that the 'Residential Neighbourhood' area is likely to include 'Open Space' linkages to the Deebing Creek corridor as part of future development planning and the final impact on critical Koala habitat is likely to be less than 66 hectares.

4. **Are you proposing to clear ≥20 hectares of habitat containing known koala food trees in an area with a habitat sore of ≥ 8?**

No, the site is not considered to contain an area with a habitat score ≥8.

Could the action interfere substantially with the recovery of the Koala?
In addition to considering adverse impacts on critical habitat, the potential for the action to interfere with the recovery of the Koala must also be considered as per the Koala Referral Guidelines. Possible impacts listed in the guidelines that must be considered include:

- Introducing or increasing koala fatalities due to dog attacks;
- Introducing or increasing the risk of vehicle strike;
- Facilitating the introduction or spread of disease and pathogens;
- Creating a barrier to movement;
- Degrading critical habitat due to hydrological changes.

These impacts, as well as mitigation measures to address impacts, are discussed in **Table 5**.

Table 5: Potential Impacts

Impact	Likelihood	Comments
Dog attack	Potential	The development of a residential estate is likely to increase the number of dogs entering the area. However, evidence of current dog activity was recorded on-site (**Attachment 2**). Further, adjoining developments with EPBC Act approvals are likely to increase the abundance of dogs in the surrounding landscape. With appropriate governance and guidance to new home buyers, such as a community engagement program involving interpretive signs, social media, fact sheets and community presentations to raise awareness, minimise threats and encourage reporting of dog threats, it is not expected that dog attacks on Koalas will increase as a result of the development. **No residual impacts are identified.**
Vehicle Strike	Potential	It is likely that vehicle activity through the residential area will increase as a result of the development. The prevalence of vehicle usage and expansion of road networks will increase throughout the surrounding landscape as adjoining developments with EPBC Act approvals proceed. Road design, signage and the imposition of a low vehicle speed will mitigate any potential risks to Koalas. Of note, predominantly low levels of Koala activity were recorded on-site in the absence of actual Koala sightings despite targeted searches. **No residual impacts are identified.**
Spread of Disease	Unlikely	Most of South East Queensland's Koala populations already have a high prevalence of *Chlamydia* infection and Koala Retrovirus. The symptoms of these diseases are often observed within Koala populations undergoing environmental stresses, such as overcrowding and poor nutrition. Sick Koala have been recorded in the vicinity of the referral area (Table 3). As such, the project is unlikely to cause pressure on the local Koala population to the point where these diseases manifest and the project is extremely unlikely to introduce or spread disease or pathogens into Koala habitat areas. **No residual impacts are identified.**
Barriers to Dispersal	Unlikely	While the proposal will restrict Koala movement through the site, it is arguable that this will not result in impacts to dispersal given the already existing barriers to movement surrounding the site. As it currently stands, the site is immediately fragmented from other habitat patches due to the location of the Centenary Highway and associated major arterial roads. Further fragmentation will result from development planned within the surrounding area, including the further expansion of residential housing in the local area pursuant to the RVPDA *Planning Scheme*. As such, the additional impacts from

		potential barriers to dispersal caused by the development are considered to be minimal. **No residual impacts are identified.**
Hydrological change	Potential	While the increase in hardstand areas across the site has the potential to affect its hydrology, management plans will be implemented to address the requirements of State and Local government guidelines to ensure that impacts are minimised. It is anticipated that the rehabilitation of Deebing Creek will involve the extensive removal and suppression of weeds and weed regrowth and include the stabilisation of erosion prone areas with weed matting and mulch. The revegetation of the creek corridor will contribute additional Koala habitat trees to the prevailing landscape to enhance and restore connectivity and habitat values. As such, the project is unlikely to result in hydrological changes that will impact other areas of critical habitat. **No residual impacts are identified.**

Field and desktop assessments against the Referral Guidelines for the Vulnerable Koala were utilised for the following Significant Impact Assessment (**Table 5**) based on the *Significant Impact Guidelines 1.1 – Matters of National Environmental Significance.*

Table 5: Significant Impact Assessment – Koala

Significant Impact Criteria	Description	Impact
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:		
1. Lead to a long term decrease in the size of an important population of a species.	While the site does contain habitat assessed as critical for the Koala, it attained a habitat score of 6, which is at the lower end of the spectrum. Further, the potential impact area is likely to be less than the 66 hectares of critical habitat designated as 'Residential Neighbourhood' under the RVPDA Structure Plan. Of note, the referral area is part of the RVPD (**Plan 1**), is significantly fragmented (**Plan 2**) and surrounded by current and future urban development, much of it holding EPBC Act approvals. In addition, field assessments over a seven year period have failed to locate Koalas on-site, despite targeted searches, with only evidence of Koala usage recorded in the form of scats. As such, Koalas that potentially utilise the site are considered transient and more likely to inhabit more optimal habitat to the south of the site. It is therefore unlikely that an important population is present on-site, and so the action is considered unlikely to decrease the size of an important population.	**No significant impact likely**
2. Reduce the area of occupancy of an important population.	An important population is not considered present on the subject site for the following reasons: • No Koalas, only evidence of their activity, have been recorded on-site • The site contains lower quality critical habitat, with more optimal habitat to the south of the site • The site is severely fragmented by adjoining arterial roads and encroaching development	**No significant impact likely**

	• Koala records in the vicinity of the site include specimens carrying disease Further, the preservation of the Deebing Creek corridor on the site will facilitate continued connectivity through the landscape. For these reasons, the proposal is not considered to reduce the area of occupancy of an important population.	
3. Fragment an existing important population into two or more populations.	The referral site is already significantly fragmented from surrounding habitat (**Plan 2**). At best, it forms a node at the periphery of a disjointed habitat landscape with negligible connectivity value to the north due to the proximity of the Centenary Highway. Further, an important population of the Koala is not considered to utilise the site given the lack of specimen records in the vicinity. Regardless, it is anticipated that the retention of the Deebing Creek corridor will maintain current connectivity values for the site and mitigate further potential fragmentation.	**No significant impact likely**
4. Adversely affect habitat critical to the survival of a species.	While the proposed action results in the removal of Koala habitat, this habitat is relatively disturbed by historical pastoral practices and subject to edge effects from surrounding arterial roads and urban development. Further, this habitat is not considered to be unique or of special value. Under the RVPDA Structure Plan, the Deebing Creek corridor is to be retained as 'Open Space' which will ensure that 16 hectares of habitat of higher connectivity value is not developed. Further, it is anticipated that the area of retained habitat will increase once additional 'Open Space' areas are refined within the balance designated 'Residential Neighbourhood' area. Given its relatively disturbed nature and gazettal as a Priority Development Area, site habitat is not considered of importance to the interim recovery objectives for the Koala. Although it is acknowledged that critical habitat for the Koala as assessed under the Guidelines will be cleared, site habitat Is not considered to constitute high value or unique habitat, and, given the extent of more optimal habitat in the surrounding Beaudesert-Ipswich landscape, the extent of potential loss is not considered to adversely affect the survival of the species.	**No significant impact likely**
5. Disrupt the breeding cycle of an important population.	Site surveys did not identify any breeding Koalas. Evidence of Koala activity in the form of scats was recorded on-site, however, no individuals were recorded despite targeted searches over a number of years. As such, the site is considered to most likely support transient individuals unlikely to constitute a breeding population or an important population, and the retention of the Deebing Creek corridor is considered to maintain current connectivity values for potential fauna dispersal. Therefore, it is considered unlikely that the breeding cycle of an important population will be disrupted by the proposed action.	**No significant impact likely**
6. Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.	The habitat on this site did not contain any special or unique values. Its removal is unlikely to have a significant impact on the availability of habitat throughout the broader landscape, given the vast quantity and availability of Koala habitat in the surrounding area. Individuals utilising the site are considered to be transient and not part of an important population. Further, the retention of the Deebing Creek corridor will provide continued connectivity values to Koala if present. As such, the removal of some site habitat is not considered likely to lead to species decline.	**No significant impact likely**
7. Result in invasive species that are harmful to a vulnerable species	Domestic dogs have the potential to become feral, are considered a major threat to Koala survival and are present in the surrounding landscape. The proposed action is likely to increase the density of	**No significant impact likely**

becoming established in the vulnerable species' habitat.	domestic dogs in the area, however, their potential to increase impacts on Koalas will be mitigated by effective governance. Invasive *Lantana camara* is present on-site and is a recognised hindrance to Koala dispersal. It is likely that this invasive plant will be suppressed under the required rehabilitation efforts for the ongoing approval of the proposed development. It is unlikely that the proposal will augment invasive species impacts already present in the area.	
8. Introduce disease that may cause the species to decline.	Most of South East Queensland's Koala populations already have a high prevalence of Chlamydia infection and Koala Retrovirus, and sick Koala have been recorded in the vicinity of the referral area. As such, the project is considered unlikely to cause pressure on the local Koala population to the point where these diseases manifest and the project is extremely unlikely to introduce or spread disease or pathogens into Koala habitat areas.	**No significant impact likely**
9. Interfere substantially with the recovery of the species.	Analysis suggests the action is unlikely to interfere substantially with the recovery of Koala (**Table 5**), primarily due to the relatively disturbed nature of the site, its current relatively high level of fragmentation, encroaching development in line with planning intent and a lack of records of the Koala utilising the site.	**No significant impact likely**

Koala summary
Targeted field surveys as per EPBC Act guidelines completed across the site resulted in no Koala observations on or surrounding the referral area. Spot Assessment Technique transects found evidence of Low to Medium activity levels for the Koala. No Koala, and no evidence of a female Koala or a breeding Koala population was recorded on-site.

Habitat Assessments found that the site is dominated by species that are not identified as preferred Koala Food trees, however, generally lower proportions of Primary and Secondary Koala Food Trees were recorded. Approximately 16 of the 82 hectares of critical habitat scored as 6 on-site is to be retained in the Deebing Creek corridor under the RVPDA Structure Plan, and more is likely to be retained as the development area is refined.

As discussed above, a number of factors diminish the adversity of impacts caused by the clearing of up to 66 hectares of critical habitat. These factors can be summarised as:

- Overall, critical habitat on-site was given a lower level score of 6 using the Habitat Assessment Tool;
- It is anticipated that Deebing Creek will require rehabilitation to provide connectivity values through the landscape and ensure long-term habitat viability should Koalas be present.
- Dogs already utilise the site.
- The site is already heavily fragmented from other vegetation patches, and all adjoining properties are currently undergoing or proposed for urban development;
- No Koalas were observed on-site and SAT assessments indicated mostly Low usage of the site by Koalas suggesting Koala activity was perhaps transient;
- Vegetation clearing will be undertaken sequentially under the guidance of a fauna spotter-catcher. This will ensure that the potential for injury or death to Koalas, if present, as a result of clearing is minimised.

Grey-headed Flying-fox (*Pteropus poliocephalus*)
Pteropus poliocephalus (Grey-headed Flying-fox) requires foraging resources and roosting sites to persist. The species is known to use a wide variety of habitats including subtropical and temperate rainforests, tall sclerophyll forest and woodlands, heaths, swamps and also urban and agricultural areas where food trees have been cultivated. The species is highly adaptive with its diverse native diet, which it can supplement with introduced species. It is known to forage within a variety of habitat areas as each resource does not produce food throughout the entire year.

The closest known roost to the subject site is located at the end of Box Street, Yamanto, associated with Deebing Creek. This roost is approximately 4 kilometres north of the application site and was confirmed as utilised by Grey-headed Flying-fox in May 2015. Opportunistic and targeted surveys during 2015 did not locate roosting sites in the application area or within the immediate vicinity of the site.

Based on habitat characteristics, targeted investigations utilising meandering spotlight transects focused mainly on habitat along Deebing Creek (refer **Attachment 2 - Figure 12**). *Pteropus poliocephalus* (Grey-headed Flying Fox) was only recorded as a fly over species during targeted searches. Site habitat characteristics are considered to provide marginal foraging resources for this species, as follows:

- Regrowth and remnant vegetation patches are dominated by *Corymbia citriodora* (Spotted Gum) and *Eucalyptus crebra* (Narrow Leaf Ironbark), with scattered *Eucalyptus tereticornis* (Forest Red Gum) food trees.
- It can be assumed that foraging by *Pteropus poliocephalus* (Grey-headed Flying Fox) could occur on the application site at various times throughout the year.
- The abundance of winter flowering resources in the broader landscape suggest site habitat represents only a small proportion of those resources and it is considered unlikely that individuals would be exclusively reliant on the resources supported by the subject site.

Grey-headed Flying-fox foraging habitat in the immediate vicinity of the referral site includes suitably vegetated sections of riparian corridors associated with Deebing and nearby Bundamba Creeks, with the former supporting a confirmed Grey-headed Flying-fox colony. Of relevance, there is another stable, long-term camp located within the recognised typical nightly commuting distance of flying-foxes (20km) at Goodna to the northeast. According to the *Draft EPBC Act Policy Statement – camp management guidelines for the Grey-headed and Spectacled Flying-fox*, the closest Nationally Important Grey-headed Flying-Fox camp is located approximately 25 km east of the referral site in the suburb of Parkinson.

It is generally recognised that Grey-headed Flying-fox utilise mature food tree species as foraging resources when bearing fruit. The subject site is known to contain woodland areas that support food tree species suitable for Grey-headed Flying-fox foraging. Of note, there is no evidence of Flying-fox roosts or roosting habitat within the site boundary or immediate surrounds.

The *Draft EPBC Act Policy Statement – camp management guidelines for the Grey-headed and Spectacled Flying-fox* (Draft Guidelines) summarise the decision process in considering the likelihood of a significant impact on the Grey-headed flying-fox or Spectacled Flying-fox schematically (in Figure 1). The Draft Guidelines, mentioned above, are specifically for the assessment of impacts on Flying-fox camps. Given no roosting sites are located on-site or in the near vicinity, it is highly unlikely that the action will involve impacts on the Grey-headed Flying-fox according to the Draft Guidelines. However, the Draft Guidelines also state that:

- *Maintaining a network of flying-fox camps and foraging habitat across both species' national range is important for their recovery.*
- *Actions that will impact on the foraging habitat of EPBC Act listed flying-foxes may also result in a significant impact. This is beyond the scope of this policy.*

As the site contains known foraging habitat for the Grey-headed Flying-fox, an assessment against *the Significant Impact Guidelines 1.1 – Matters of National Environmental Significance* was conducted (refer to **Table 6**) to ascertain whether or not the action could potentially impose a significant impact on the species.

Table 6: Significant Impact Assessment – Grey-headed Flying-fox

Significant Impact Criteria	Description	Impact
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:		
1. Lead to a long term decrease in the size of an important population of a species.	While the site does contain potential foraging habitat for the Grey-headed Flying-fox and the species was recorded as a fly-over, no roost camps were seen on or adjoining the site. South East Queensland has a permanent and relatively abundant population of Grey-headed Flying-foxes and available habitat is relatively abundant and spread throughout the region given the high prevalence of eucalypts. Although Grey-headed Flying-fox are potential visitors to the site when foraging, their recognised nightly commuting distance spans up to 20 km and so includes a relatively vast area of suitable habitat within the surrounding landscape. The site is not considered to support an important population of the species and the proposed action is considered unlikely to lead to a long term decrease in the size of any local Grey-headed Flying-fox populations.	**No significant impact likely**

2. Reduce the area of occupancy of an important population.	No roost camps were observed across the site. While the proposed action will remove available foraging habitat, given the abundant availability of eucalypts in the surrounding landscape and the greater region, the development proposal is unlikely to have a significant impact on the area of occupancy of the species.	**No significant impact likely**
3. Fragment an existing important population into two or more populations.	The SPRAT species profile outlines that, while there are spatially structured colonies of Grey-headed Flying-fox, there are no separate or distinct populations due to the constant genetic exchange and movement between camps throughout the species' geographic range. In addition, the species is considered highly mobile and capable of foraging over relatively vast distances. The proposed action is considered unlikely to fragment a population into two or more populations.	**No significant impact likely**
4. Adversely affect habitat critical to the survival of a species.	While the proposed action results in the removal of potential foraging habitat, this habitat is relatively disturbed by clearing and pastoral practices and subject to edge effects from surrounding development. Further, this habitat is not considered to be unique or of special value. The South East Queensland landscape provides abundant eucalypt and similar genera, which are available for Grey-headed Flying-fox foraging. Of note, the Deebing Creek corridor to be preserved within the proposal area will maintain foraging resources post development. Given its relatively disturbed nature, potential foraging habitat to be cleared is not considered to be critical habitat for Grey-headed Flying-fox.	**No significant impact likely**
5. Disrupt the breeding cycle of an important population.	The site surveys did not identify any evidence of breeding Grey-headed Flying-fox. Mating normally occurs within autumn, and females generally give birth in October, when they carry their young to feeding sites for four to five weeks after giving birth. As no roosting camps were observed on or adjoining the site, the proposed action is unlikely to disrupt the breeding cycle of an important population.	**No significant impact likely**
6. Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.	The habitat on site did not contain any special or unique values. Its removal is unlikely to have a significant impact on the availability of habitat throughout the broader landscape, given the vast quantity and availability of eucalypts in the surrounding area.	**No significant impact likely**
7. Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat.	The proposed action is unlikely to result in the introduction of invasive species that are harmful to Grey-headed Flying-fox.	**No significant impact likely**
8. Introduce disease that may cause the species to decline.	The project is unlikely to introduce disease into the area that may cause species decline.	**No significant impact likely**
9. Interfere substantially with the recovery of the species.	Recovery of the species has specifically targeted broad scale culling. In addition, conservation efforts have led to the protection of known roosting sites and associated important habitat. The subject site has not been identified as an important habitat or roost site and the action is considered unlikely to interfere with the recovery of the species.	**No significant impact likely**

As per the assessment against the *Significant Impact Guidelines 1.1*, the proposed action is considered unlikely to have a significant impact on the Grey-headed Flying-fox.

Nature and extent of likely impact

In terms of impacts on MNES, the project will result in the following:

- Potential removal of up to 66 hectares of critical habitat for the Koala
- Potential injury or death to Koalas as a result of vegetation clearing
- Increased vehicle use during and after construction, which pose potential threats to Koalas

Koala

The potential removal of up to 66 hectares of critical Koala habitat as assessed under the Guidelines is considered unlikely to impose a significant impact on the Koala for the following reasons:

- Overall, critical habitat on-site was given a lower level score of 6 using the Habitat Assessment Tool;
- It is anticipated that Deebing Creek will require rehabilitation to provide connectivity values through the landscape and ensure long-term habitat viability should Koalas be present.
- Dogs already utilise the site.
- The site is already heavily fragmented from other vegetation patches, and all adjoining properties are currently undergoing or proposed for urban development;
- No Koalas were observed on-site and SAT assessments indicated mostly Low usage of the site by Koalas suggesting Koala activity was perhaps transient;
- Vegetation clearing will be undertaken sequentially under the guidance of a fauna spotter-catcher. This will ensure that the potential for injury or death to Koalas, if present, as a result of clearing is minimised.

Grey-headed Flying-fox

No significant impacts on the Grey-headed Flying-fox (refer **Table 6**) are considered likely as a result of the proposed action.

Summary

As such, no significant impacts on listed species or TECs are expected as a result of the proposed development.

3.1 (e) Listed migratory species

Description

Of the seventeen (17) PMST listed migratory species with potential to utilise the site (**Attachment 1**), the following are considered potential visitors based on site habitat characteristics or being recorded on-site (**Table 7**, refer to **Attachment 2 – Appendix D** for Likelihood of Occurrence analysis).

Table 7: Listed Migratory Species of Note

Scientific Name	Common Name	Site Status
Ardea ibis	Cattle Egret	Recorded on-site
Hirundapus caudacutus	White Throated Needletail	Possible Visitor
Merops ornatus	Rainbow Bee-eater	Recorded on-site
Myiagra cyanoleuca	Satin Flycatcher	Recorded on-site
Pandion haliaetus	Osprey	Possible Visitor

Although the Cattle Egret, Rainbow Bee-eater and Satin Flycatcher were observed foraging on-site, no evidence of their nesting or the presence of significant populations were recorded.

Nature and extent of likely impact

The proposed action is not considered to have a significant impact on migratory species given the lack of important habitat or evidence of significant populations on-site.

3.1 (f) Commonwealth marine area
(If the action is in the Commonwealth marine area, complete 3.2(c) instead. This section is for actions taken outside the Commonwealth marine area that may have impacts on that area.)

Description

NOT APPLICABLE (refer to **Attachment 1**).

Nature and extent of likely impact

NOT APPLICABLE

3.1 (g) Commonwealth land
(If the action is on Commonwealth land, complete 3.2(d) instead. This section is for actions taken outside Commonwealth land that may have impacts on that land.)

Description

NOT APPLICABLE (refer to **Attachment 1**).

Nature and extent of likely impact

NOT APPLICABLE

3.1 (h) The Great Barrier Reef Marine Park

Description

NOT APPLICABLE (refer to **Attachment 1**).

Nature and extent of likely impact

NOT APPLICABLE

3.1 (i) A water resource, in relation to coal seam gas development and large coal mining development

Description

NOT APPLICABLE (refer to **Attachment 1**).

Nature and extent of likely impact

NOT APPLICABLE

3.2 Nuclear actions, actions taken by the Commonwealth (or Commonwealth agency), actions taken in a Commonwealth marine area, actions taken on Commonwealth land, or actions taken in the Great Barrier Reef Marine Park

3.2 (a)	**Is the proposed action a nuclear action?**	**X**	No
			Yes (provide details below)
	If yes, nature & extent of likely impact on the whole environment		
3.2 (b)	**Is the proposed action to be taken by the Commonwealth or a Commonwealth agency?**	**X**	No
			Yes (provide details below)

	If yes, nature & extent of likely impact on the whole environment		
3.2 (c)	**Is the proposed action to be taken in a Commonwealth marine area?**	**X**	No
			Yes (provide details below)
	If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(f))		
3.2 (d)	**Is the proposed action to be taken on Commonwealth land?**	**X**	No
			Yes (provide details below)
	If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(g))		
3.2 (e)	**Is the proposed action to be taken in the Great Barrier Reef Marine Park?**	**X**	No
			Yes (provide details below)
	If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(h))		

3.3 Other important features of the environment

3.3 (a) Flora and fauna

Response 3.3(a)
The following provides a brief description of other flora and fauna values found on-site during desktop and field surveys:

Flora
The proposed development area is highly modified due to historical pastoral practices, clearing and site maintenance (refer Response 3.3(g)). Exotic flora were prevalent across the site, especially in drainage depressions. The following ninety (90) native flora species were recorded on-site during site surveys (**Table 8**, refer to **Attachment 2** for further information):

Table 8: Site Flora List

Scientific Name	Common Name
Acacia concurrens	Black Wattle
Acacia disparrima	Hickory Wattle
Acacia falcata	Sickle wattle
Acacia fimbriata	Brisbane golden wattle
Acacia glaucocarpa	Hickory wattle
Acacia leiocalyx	Early Flowering Black Wattle
Acacia salicina	Doolan
Allocasuarina littoralis	Black She Oak
Allocasuarina luehmannii	Bull Oak
Alphitonia excelsa	Soap Tree
Amyema pendulum	
Angophora floribunda	
Angophora leiocarpa	Smooth-bark Apple
Angophora subvelutina	
Araucaria bidwillii	Bunya pine
Araucaria heterophylla	Norfolk Pine
Brachychiton populneus	Kurrajong
Breynia oblongifolia	Coffee bush
Calotis cuneifolia	Burr-daisy
Cassytha glabella	Dodder Laurel

Scientific Name	Common Name
Casuarina cristata	Belah
Casuarina cunninghamiana	River Oak
Centella asiantica	Pennywort
Cheilanthes distans	Bristle cloak fern
Chrysocephalum apiculatum	Yellow Buttons
Corymbia citriodora	Spotted Gum
Corymbia henryi	Large-leaved Spotted Gum
Corymbia intermedia	Pink Bloodwood
Corymbia tessellaris	Moreton bay ash
Corymbia trachyphloia	Brown Bloodwood
Cymbopogon refractus	Barbed Wire Grass
Cyperus difformis	Rice sedge
Cyperus polystachyos	Bunchy Sedge
Dianella longifolia	Lilly
Dianella revoluta	
Dichondra repens	Kidney weed
Drosera spatulata	Spoon-leaved Sundew
Erythrina vespertilio	Bat wing coral tree
Eucalyptus crebra	Narrow Leaf Ironbark
Eucalyptus melanophloia	Silver-leaf Ironbark
Eucalyptus moluccana	Gum Topped Box
Eucalyptus seeana	Narrow leaf Red Gum
Eucalyptus siderophloia	Grey Ironbark
Eucalyptus tereticornis	Forest Red Gum
Eustrephus latifolius	wombat berry
Exocarpus cupressiformis	Native Cherry
Ficus coronata	Sand Paper Fig
Ficus macrophylla	Moreton Bay Fig
Ficus obliqua	Small-leaved Fig
Ficus opposita	A Sandpaper Fig
Ficus platypoda	
Flindersia australis	Crow's ash
Geitonoplesium	Scrambling Lilly
Glochidion sumatranum	Large-leaved Cheese Tree
Glycine clandestina	
Goodenia rotundifolia	Goodenia
Hibiscus dicersifolius	Swamp Hibiscus
Imperata cylindrica	Blady Grass
Juncus usitatus	Common Rush
Laxmannia gracilis	Slender wire lily
Lobelia purpurascens	White Root
Lomandra confertifolia subsp. pallida	
Lomandra longifolia	Mat Rush
Lomandra multiflora	Many Flowered Mat Rush
Lophostemon suaveolens	Swamp Box
Ludwigia octovalvis	Native Willow Primrose
Maireana microphylla	
Melaleuca irbyana	Swamp Tea-tree
Melaleuca quinquenervia	Broad Leaf Paperbark
Melaleuca viminalis	Weeping Bottlebrush
Murdannia graminea	Slug herb
Nymphaea caerulea	Blue Water Lilly
Oplismenus aemulus	Creeping beard Grass

Scientific Name	Common Name
Oxalis sp.	
Ozothamnus diosmifolius	Sago Flower
Panicum simile	
Parsonsia straminea	Monkey Rope Vine
Persicaria decipiens	Slender Knotweed
Petalostigma pubescens	Quinine Bush
Philydrum lanuginosum	Woolly Frogmouth
Poa labillardieri	Tussock Grass
Pratia purpurascens	Whiteroot
Pteridium esculentum	Bracken
Sida cordifolia	Flannel Weed
Sida hackettiana	
Themeda triandra	Kangaroo Grass
Trema tomentosa	Poison Peach
Typha orientalis	Bulrush
Velleia paradoxa	Spur velleia
Viscum articulatum	Flat mistletoe

No native flora species of note were recorded on-site. A further fifty-three (53) invasive flora species were recorded on-site (**Table 9**), and eleven (11) of these are legislatively declared weed species. As such, approximately 38% of site flora species are introduced, which is reflective of a highly disturbed landscape (**Attachment 2**).

Table 9: Exotic or weedy species

Scientific Name	Common Name	LPA Class
Ageratum houstonianum	Blue Billygoat Weed	
Ambrosia arteminisiifolia	Annual Ragweed	Class 2
Asparagus africanus	Climbing asparagus fern	
Axonopus fissifolius		
Baccharis halimifoila	Groundsel Bush	Class 2
Bidens pilosa	Cobbler's Pegs	
Bryophyllum delagoense	Mother-of-millions	Class 2
Celtis sinensis	Chinese Elm	Class 3
Chloris gayana	Rhodes Grass	
Chloris virgata	Feathertop Rhodes Grass	
Conyza bonariensis	Flaxleaf Fleabane	
Corymbia torreliana	Cadaghi	
Cyperus involucratus	Umbrella Sedge	
Gomphocarpus physocarpus	Balloon Cotton Bush	
Heliotropium amplexicaule	Blue Heliotrope	
Heterotheca grandiflora	Telegraph Weed	
Ipomoea cairica	Mile-a-minute	
Ipomoea indica	Morning Glorry	
Lantana camara	Lantana	Class 2
Lantana montevidensis	Creeping Lantana	Class 2
Leucaena leucocephala	Leucaena	
Lysimachia arvensis	Scarlet Pimpernel	
Macroptilium atropurpureum	Siratro	
Mangiferia indica	Mango Tree	
Megathyrsus maximus	Guinea Grass	
Melinis repens	Red Natal Grass	
Morus alba	Mulberry	
Murraya paniculata	Mock Orange	
Neonotonia wightii	Glycine	
Ochna serrulata	Ochna	

Scientific Name	Common Name	LPA Class
Onopordum acanthium	Scotish Thistle	
Opuntia tomentosa	Prickly pear	Class 2
Paspalum dilatatum	Paspalum	
Passiflora foetida	Stinking Passion Flower	
Passiflora suberosa	Corky Passion Vine	
Pinus elliottii	Slash pine	
Psidium cattleianum	Cherry Guava	
Ricinus communis	Castor Oil Plant	
Schefflera actinophylla	Umbrella tree	
Schinus terebinthifolius	Broadleaved Pepper	Class 3
Senecio madagascariensis	Fireweed	Class 2
Senna pendula	Easter Cassia	
Solanum chrysotrichum	Giant Devil's Fig	
Solanum mauritianum	Wild Tobacco Tree	
Solanum nigrum	Blackberrry Nightshade	
Solanum seaforthianum	Brazilian Nightshade	
Solvia sessillis	Bindii	
Sporobolus pyramidalis	Giant Rat's Tail Grass	Class 2
Stachytarpheta cayennensis	Snake Weed	
Tecoma stans	Yellow Bells	Class 3
Thunbergia alata	Black-eyed Susan	
Urochloa mutica	Para grass	
Vinia molesta	Salvinia	

Fauna

Waterway banks displayed extensive erosion and disturbance from cattle activity. Very few significant tree hollows were observed in relatively large individual canopy tree specimens, however, these were not observed to be occupied by significant fauna species. Dogs were observed utilising the site, and these species are considered generally detrimental to native fauna persistence.

The following ninety-two (92) fauna species were recorded on-site (**Table 10**, refer to **Attachment 2** for further information):

Table 10: Site Fauna List

Scientific Name	Common Name
Birds	
Accipiter fasciatus	Brown Goshawk
Aegotheles cristatus	Australian Owlet-nightjar
Alcedo azurea	Azure Kingfisher
Anas superciliosa	Pacific Black Duck
Apus pacificus	Fork-tailed Swift
Aquila audax	Wedge-tailed Eagle
Ardea ibis	Cattle Egret
Ardea pacifica	White-necked Heron
Cacatua galerita	Sulphur-crested Cockatoo
Cacomantis flabelliformis	Fan-tailed Cuckoo
Caligavis chrysops	Yellow-faced Honeyeater
Cythrops novaehollandiae	Channel-billed Cuckoo
Centropus phasianinus	Pheasant Coucal
Chenoonetta jubata	Australian Wood Duck
Climacteris picumnus	Brown Treecreeper
Colluricincla harmonica	Grey Shrike-thrush
Coracina novaehollandiae	Black-faced Cuckoo-shrike
Corvus orru	Torresian Crow
Coturnix ypsilophora	Brown Quail

Scientific Name	Common Name
Cracticus nigrogularis	Pied Butcherbird
Cracticus torquatus	Grey Butcherbird
Dacelo novaeguineae	Laughing Kookaburra
Dicrurus bracteatus	Spangled Drongo
Egretta novaehollandiae	White-faced Heron
Entomyzon cyanotis	Blue-faced Honeyeater
Eolophus roseicapilla	Galah
Eopsaltria australis	Eastern Yellow Robin
Eudynamys scolopacea	Common Koel
Eurystomus orientalis	Dollarbird
Gerygone albogularis	White-throated Greygone
Grallina cyanoleuca	Magpie-lark
Gymnorhina tibicen	Australian Magpie
Hirundo neoxena	Welcome Swallow
Lichmera indistincta	Brown Honeyeater
Malurus cyaneus	Superb Fairy-wren
Malurus lamberti	Variegated Fairy-wren
Malurus melanocephalus	Red-backed Fairy Wren
Manorina melanocephala	Noisy Miner
Meliphaga lewinii	Lewin's Honeyeater
Merops ornatus	Rainbow Bee-eater
Milvus migrans	Black Kite
Myiagra cyanoleuca	Satin Flycatcher
Myzomela sanguinolenta	Scarlet Honeyeater
Ninox novaeseelandiae	Southern Boobook
Ocyphaps lophotes	Crested Pigeon
Pachycephala rufiventris	Rufous Whistler
Pardalotus punctatus	Spotted Pardalote
Pardalotus striatus	Striated Pardalote
Passer domesticus	House Sparrow
Phaps chalcoptera	Common Bronzewing
Philemon corniculatus	Noisy Friarbird
Platycercus adscitus	Pale-headed Rosella
Podargus strigoides	Tawny Frogmouth
Porphyrio porphyrio	Purple Swamphen
Psophodes olivaceus	Eastern Whipbird
Rhipidura albiscapa	Grey Fantail
Rhipidura leucophrys	Willie Wagtail
Smicrornis brevirostris	Weebill
Strepera graculina	Pied Currawong
Taeniopygia bichenovii	Double-barred Finch
Threskiornis molucca	Australian White Ibis
Trichoglossus chlorolepidotus	Scaly-breasted Lorikeet
Trichoglossus haematodus	Rainbow Lorikeet
Vanellus miles	Masked Lapwing
Zosterops lateralis	Silvereye
Reptiles	
Hemidactylus frenatus	Asian House Gecko
Physignathus leseurii	Eastern Water Dragon
Pogona barbata	Common Bearded Dragon
Varanus varius	Lace Monitor
Cryptoblepharus virgatus	Wall Skink
Lampropholis delicata	Grass Skink
Pseudonaja textilis	Eastern Brown Snake
Pseudechis porphyriacus	Red-bellied Black Snake
Demansia psammophis	Yellow-faced Whip Snake
Furina diadema	Red-naped Snake

Scientific Name	Common Name
Dendrelaphis punctulatus	Common Tree Snake
Morelia spilota	Carpet Python
Mammals	
Bos taurus	Cattle
Canis lupus dingo	Dingo
Canis lupus familiaris	Dog
Equus caballus	Horse
Macropus giganteus	Grey Kangaroo
Mus musculus	House Mouse
Phascolarctos cinereus	Koala
Pteropus poliocephalus	Grey-headed Flying Fox
Sus scrofa	Pig
Trichosurvus vulpecula	Common Brushtail Possum
Vulpes vulpes	Red Fox
Wallabia bicolor	Swamp Wallaby
Amphibians	
Crinia parinsingifera	Beeping Froglet
Pseudophryne coriacea	Red backed broodfrog
Rhinella marina	Cane Toad

Overall, three (3) amphibians, sixty-five (65) birds, twelve (12) mammals and twelve (12) reptiles were recorded (**Table 10**). Three listed migratory species, *Merops ornatus* (Rainbow bee-eater), *Ardea ibis* (Cattle Egret) and *Myiagra cyanoleuca* (Satin Flycatcher) were recorded on-site, although ideal habitat for these species was considered lacking. Stratified log, leaf litter and habitat searches did not reveal any listed threatened species utilising the site, including *Delma torquata* (Collared delma). None of the species recorded are listed as threatened species at the State or Commonwealth level.

Feral mammal species, such as *Canis lupus* (Dog/Dingo), *Equus caballus* (Horse), *Mus musculus* (House Mouse), *Sus scrofa* (Wild Pig) and *Vulpes vulpes* (Red Fox) were also recorded on-site (**Table 10**). Dogs, Dingos and Foxes are considered threats to the Koala and other native species. Further, the noxious amphibian *Rhinella marina* (Cane Toad) was very common on-site, and is considered a significant threat to native animals that prey on the poison species.

Of note, Infrared camera surveys identified only common or feral fauna utilising the site (refer **Attachment 2 – Section 4.6.1**) and ultrasonic bat detection and targeted potential roost habitat surveys did not record the calls or evidence of listed microbat species with the potential to occur on-site (refer **Attachment 2 – Section 4.7**).

3.3 (b) Hydrology, including water flows

Response 3.3(b)
Deebing Creek is an ephemeral tributary of the Bremer River and provides connectivity values throughout the immediate landscape. Mapped watercourse tributaries connect to Deebing Creek running through the centre of the site and area likely to drain overland flow due to soil saturation during high rainfall events. The referral area contains the upper reaches of Deebing Creek that maintains a dynamic sandy bed and highly erosive banks and is devoid of permanent aquatic habitat features. Mapped watercourse features on-site were assessed as highly degraded and largely populated with weed species. It is anticipated that management plans will be required as part of ongoing approvals to minimise the potential for hydrological changes to impact on Deebing Creek. Refer to **Attachment 2 – Sections 4.2 & 4.3** for further information.

3.3 (c) Soil and Vegetation characteristics

Response 3.3(c)
Soils
The site is mapped by the *Australian Soil Resource Information System* as containing primarily Chromosols with Dermosols along Deebing Creek (**Attachment 2 – Figure 9**). The following Land Zones are mapped for the site.

Land Zone 3

Short description: recent Quaternary alluvial systems

General term: alluvial river and creek flats

Recent Quaternary alluvial systems, including closed depressions, paleo-estuarine deposits currently under freshwater influence, inland lakes and associated wave built lunettes. Excludes colluvial deposits such as talus slopes and pediments. Includes a diverse range of soils, predominantly Vertosols and Sodosols; also with Dermosols, Kurosols, Chromosols, Kandosols, Tenosols, Rudosols and Hydrosols; and Organosols in high rainfall areas.

Land Zone 9

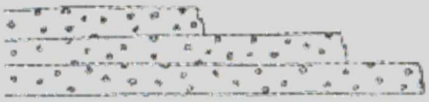
Short description: fine grained sedimentary rocks

General term: undulating country on fine grained sedimentary rocks

Fine grained sedimentary rocks, generally with little or no deformation and usually forming undulating landscapes. Siltstones, mudstones, shales, calcareous sediments, and labile sandstones are typical rock types although minor interbedded volcanics may occur. Includes a diverse range of fine textured soils of moderate to high fertility, predominantly Vertosols, Sodosols, and Chromosols.

Land Zone 10

Short description: coarse grained sedimentary rocks



General term: sandstone ranges

Medium to coarse grained sedimentary rocks, with little or no deformation, forming plateaus, benches and scarps. Includes siliceous (quartzose) sandstones, conglomerates and minor interbedded volcanics, and springs associated with these rocks. Excludes overlying Cainozoic sand deposits (land zone 5). Soils are predominantly shallow Rudosols and Tenosols of low fertility, but include sandy surfaced Kandosols, Kurosols, Sodosols and Chromosols

(Extract from Department of Environment and Heritage Protection, 20 February 2013)

Vegetation

The Subject site contains cleared non-remnant pasture areas, riparian vegetation associated with Deebing Creek and vegetated woodlands.

The Deebing Creek corridor contains an intact canopy with varying degrees of disturbance including severe *Lantana camara* (Lantana) infestations along both banks and significant erosion. A number of very large scattered *Eucalyptus tereticornis* (Forest Red Gum) were also located along the edges of this major drainage line. The creek itself contains a narrow strand of remnant vegetation. The T1 layer consists mainly of *Eucalyptus tereticornis* (Forest Red Gum), *Corymbia citriodora* (Spotted Gum) and *Eucalyptus crebra* (Narrow Leaf Iron Bark). The T2 layer consists of regrowth eucalypt and *Corymbia* specimens and also contains *Lophostemon suaveolens* (Swamp Box), *Allocasuarina littoralis* (Black She Oak), *Alphitonia excelsa* (Soap Tree), *Acacia disparrima* (Hickory Wattle) and *Acacia concurrens* (Black Wattle). This shrub and ground layer is strongly influenced by introduced species, including various grasses, and *Lantana camara* (Lantana). Refer to **Attachment 2 – Section 4.2** for further information.

Non-remnant portions of the site include the two overland flow paths, open grass paddocks and isolated regrowth eucalypt and *Corymbia* patches. The entire area, including the overland flow paths, is mapped as non-remnant under Regional Ecosystem mapping (**Attachment 2 - Figure 4**). The majority of the area contains a diversity of vegetation consistent with Land Zone 9-10. No ecologically dominant T1 vegetation layer was identified throughout the assessment area. However, a number of scattered mature specimens were identified including *Eucalyptus tereticornis* (Forest Red Gum), *Eucalyptus moluccana* (Gum Topped Box), *Eucalyptus siderophloia* (Grey Ironbark) and *Corymbia citriodora*

(Spotted Gum). The dominant native species remaining within this assessment area were *Acacia concurrens* (Black Wattle) and *Acacia disparrima* (Hickory Wattle). Also planted in the open grass paddocks are a number of *Ficus* specimens and a large *Araucaria bidwilli* (Bunya Pine). Refer to **Attachment 2 – Section 4.3** for further information.

To the east of Deebing Creek, the vegetation community within the balance area over the hills and ridges is described as a mix of Least Concern and Composite Of Concern Regional Ecosystem vegetation communities. In less disturbed areas, the woodland is generally composed of a grass layer, a shrub layer and a T2 layer that includes *Acacia* sp. and *Casuarina* sp. However, in some areas on this application site the ground and shrub layer has been generally removed due to current land uses including pastoral practices. The majority of the vegetation remaining is mature, semi-mature and regrowth eucalypt and *Corymbia* species, which are dominant within the canopy layer.

The Hills and Ridges area can be divided into two sub areas separated by the rectified PMAV:

The north-western portion of this assessment area is confirmed as Least Concern RE 12.9-10.2, which is described as *Corymbia citriodora, Eucalyptus crebra* open forest on sedimentary rocks.

The south-eastern woodland area is confirmed as a composite vegetation community described as Of Concern RE 12.9-10.2 / 12.9-10.7, which is composed of *Corymbia citriodora, Eucalyptus crebra, Eucalyptus tereticornis* ± *Corymbia tessellaris, Angophora* spp., *Eucalyptus melanophloia* open forest to woodland on sedimentary rocks.

Overall, site vegetation was found to be relatively disturbed as a result of historical pastoral practices, which have left the proposed development area constituted of mostly regrowth with mature tree specimens and a weedy understorey with cleared areas.

3.3 (d) Outstanding natural features

Response 3.3(d)
No outstanding natural features have been identified across the subject site. In particular, the sites proximity to the Centenary Highway and surrounding encroaching urban development has rendered it fragmented and isolated from other habitat areas in the broader regional landscape. Previous disturbances in the greater local area have significantly reduced the ecological value of the site and no outstanding natural features can be identified.

3.3 (e) Remnant native vegetation

Response 3.3(e)
Three (3) Regional Ecosystems have been rectified at the property scale on the site as per the certified PMAV (**Attachment 2 – Figure 5**).

Least Concern RE 12.3.7
Narrow fringing woodland of *Eucalyptus tereticornis*, *Casuarina cunninghamiana* subsp. *cunninghamiana +/- Melaleuca viminalis, Waterhousea floribunda*. Other species associated with this RE include *Melaleuca bracteata, M. trichostachya, M. linariifolia* and *M. fluviatilis* in north of bioregion. *Lomandra hystrix* often present in stream beds. Occurs on fringing levees and banks of rivers and drainage lines of alluvial plains throughout the region. (BVG1M: 16a). Vegetation communities in this regional ecosystem include: 12.3.7a: Riverine wetland or fringing riverine wetland. *Melaleuca bracteata* open forest. Occurs in drainage depressions on Quaternary alluvial plains. (BVG1M: 22c). 12.3.7b: Riverine wetland or fringing riverine wetland. Naturally occurring waterholes and lagoons, both permanent and intermittent. Includes exposed stream bed and bars. Occurs in the bed of active (may be intermittent) river channels. (BVG1M: 16d). 12.3.7c: Palustrine wetland (e.g. vegetated swamp). Billabongs and ox-bow lakes containing either permanent or periodic water bodies. Old river beds now cut off from regular flow. (BVG1M: 34d). 12.3.7d: Palustrine wetland (e.g. vegetated swamp). Aquatic vegetation usually fringed with *Eucalyptus tereticornis*. Closed depressions on alluvial plains. (BVG1M: 34d).

Least Concern RE 12.9-10.2
Corymbia citriodora subsp. variegata open forest or woodland usually with *Eucalyptus crebra*. Other species such as *Eucalyptus tereticornis* and *Corymbia intermedia* may be present in scattered patches or in low densities. Understorey can be grassy or shrubby. Shrubby understorey of *Lophostemon confertus* (whipstick form) often present in northern parts of bioregion. Occurs on Cainozoic and Mesozoic sediments. (BVG1M: 10b).

Of Concern RE 12.9-10.7
Eucalyptus crebra +/- E. tereticornis, Corymbia tessellaris, Angophora leiocarpa, E. melanophloia woodland. Occurs on Cainozoic and Mesozoic sediments. (BVG1M: 13c). Vegetation communities in this regional ecosystem include: 12.9-10.7a: *Eucalyptus siderophloia, Corymbia intermedia +/- E. tereticornis* and *Lophostemon confertus* open forest. Occurs on Cainozoic and Mesozoic sediments in near coastal areas. (BVG1M: 12a).

3.3 (f) Gradient (or depth range if action is to be taken in a marine area)

Response 3.3(f)
The subject site gradient ranges from approximately 50 m AHD at Deebing Creek to 70 m AHD at the western boundary and 100 m AHD in ridges to the east.

3.3 (g) Current state of the environment

Response 3.3(g)
The subject site is undulating with a combination of a sloping plain in the west and gullies and hills in the east. The site contains two cleared power easements traversing in an approximate north-easterly direction (**Figure 2**). Areas to the east of Deebing Creek generally consist of steeper slopes, ridges and gully lines. The majority of the site to the west of Deebing Creek is cleared pasture or degraded regrowth. The hills and ridges to the east are relatively vegetated with eucalypt forest with the exception of the easements and small clearings.

Ongoing pastoral activities have resulted in a significant level of disturbance on-site. This is evidenced in the high rate of weed incursion recorded, with roughly 38% of flora species recorded regarded as weeds or exotic species, and eleven (11) of these requiring control or containment under legislative regulations (refer Response 3.3(a)). In addition, the site is utilised by dogs suggesting, in its current condition, the area is not conducive to native fauna persistence.

Refer to **Attachment 2 – Section 4** for further description of the site environment.

3.3 (h) Commonwealth Heritage Places or other places recognised as having heritage values

Response 3.3(h)

NOT APPLICABLE (refer to **Attachment 1**).

3.3 (i) Indigenous heritage values

Response 3.3(i)
The proposed development is covered by a *Cultural Heritage Management Agreement* (CHMA) between the proponent, **Jagera Daran Pty Ltd** and the Jagera people. Further investigations and surveys will be carried out under the terms of the CHMA. All works on the site will comply with the CHMA.

3.3 (j) Other important or unique values of the environment

Response 3.3(j)
The site is not located near other notable environmental features that are likely to be affected by the proposed action.

3.3 (k) Tenure of the action area (eg freehold, leasehold)

Response 3.3(k)
The action area is on a Freehold allotment.

3.3 (l) Existing land/marine uses of area

Response 3.3(l)
The site is currently utilised for pastoral production.

3.3 (m) Any proposed land/marine uses of area

Response 3.3(m)
The proposed land use is for a residential community.

4 Environmental outcomes

Response 4
The proposed action will result in the removal of Koala Habitat Trees from the referral area to enable development. Importantly, the Deebing Creek corridor, which maintains tenuous connectivity through the centre of the site and adjoining landscape, will be retained as per the PDA Structure Plan (**Plan 1**). While evidence of Koala activity was recorded on-site, their potential utilisation of the site is limited by the expansion of development on land already retaining EPBC Act determinations and Local and State Government Approvals that adjoins the project area and the proximity of the Centenary Highway (**Plan 2**). The highly fragmented context in which the project site occurs is not a result of any actions taken by this proponent. Based in this context, the land is not considered to retain Critical Habitat to the Survival of the Koala species and thus is not considered to result in a Significant Impact on a *Matter of National Environmental Significance*.

In addition, it is anticipated that the following environmental management mitigation measures will be committed to as part of the ongoing approvals process (refer Response at Section 5 for further information):

- Vegetation Management Plan
- Fauna Management Plan
- Stormwater Management Plan
- Erosion and Sediment Control Plan

On a local scale, the retention and rehabilitation of the Deebing Creek corridor is proposed as part of the development In accordance with best management practice, restoration and rehabilitation works will seek to stabilise and reverse the negative effects of ongoing habitat fragmentation. The intent is for managed areas of rehabilitation and restoration to rectify canopy gaps and restore bare or denuded areas to provide additional habitat and refugia within the lower strata to maintain connectivity with external approved corridors and improve terrestrial corridor viability.

The primary objectives recommended for the Deebing Creek corridor to be rehabilitated include:

- Retain significant floral species and vegetation communities
- Retain and enhance fauna habitat values
- Remove and manage processes potentially threatening the viability of existing habitats
- Increase the extent of vegetation communities and potential fauna habitat over time.

Rehabilitation works within the Deebing Creek corridor will include weed management and replanting with native species consistent with mapped Regional Ecosystems to augment ecological values and enhance connectivity. Additional strategies such as time salvage, propagule sourcing and installation of fauna habitat components (i.e. nest boxes) and fauna awareness signage will also occur in association with the clearing of each development stage. In addition, it is anticipated that roadway crossings over Deebing Creek will be designed so as to be fauna friendly to promote continued fauna dispersal.

The preservation and rehabilitation of the Deebing Creek corridor under the proposal is considered to provide a noteworthy environmental outcome for *Matters of National Environmental Significance* that may infrequently utilise the site as part of a broader home range. Further, as the site was assessed as not containing critical habitat for the survival of listed species under the EPBC Act, specifically the Koala, the action is considered to be deemed Not a Controlled Action.

Should the Department disagree with this decision and consider the action a Controlled Action, a draft set of possible outcomes based conditions for the proposal has been prepared in accordance with the *Draft Outcomes-based Conditions Policy 2015* and *Outcomes-based Conditions Guidance 2015* (refer **Attachment 3**). Of note, the proponent has been proactive in obtaining an agreement with the **Queensland Trust for Nature** to provide DoE approved offsets for the loss of Koala habitat should they be required. In the event that a Controlled Action Determination is made, the attached Draft conditions should be used to complete the approval process of this referral through the Assessment on Referral Documentation process.

5 Measures to avoid or reduce impacts

Response 5
The primary impact on the natural environment as a result of the project is the clearing of mature native trees within remnant vegetation. As part of the development approval conditions likely to be imposed by **Economic Development Queensland**, a number of management measures to mitigate impacts must be implemented by the proponent. These conditions aim at mitigating environmental impacts as a result of clearing and construction, and are summarised below:

1. Vegetation Management Plan
- A Vegetation Management Plan must be included within the Operational Works application and include the following information:
- Location of protected vegetation, vegetation to be retained and vegetation to be removed
- Details on vegetation types
- Location of significant vegetation (remnant vegetation, city wide significant species etc.)
- Particulars on how vegetation is proposed to be cleared (clearing sequence plan)
- Methods for protecting or relocating plants
- Disposal methods

2. Fauna Management Plan
- All works must be undertaken in accordance with the approved Fauna Management Plan. This includes details on:
- Species surveyed as using the site
- A plan showing existing habitat areas
- Details of threats to existing fauna
- Clearing sequence plan
- Management and mitigation measures - e.g. temporary fauna exclusion fencing
- Fauna spotter role, contacts and certification
- Specific fauna management procedures for potential or known habitat trees

3. Stormwater Management Plan
All works must be carried out and completed in accordance with an approved Stormwater Management Plan. This provides details on:
- Stormwater quality improvement devices
- Mechanisms for monitoring and reporting

The implementation of the Stormwater Management Plan will ensure that water quality standards set by State and Local governments are achieved.

4. Erosion and Sediment Control Plan
Operational works applications must be accompanied by an Erosion and Sediment Control Plan, to be approved by EDQ. It must contain details on:
- Catchment boundary and overland flow path
- Estimated soil loss from each catchment
- Length, width and depth of each sediment basin
- Spillway details and levels
- Energy dissipation/ scour protection
- High flow bypass
- Cross section, capacity and spacing of each catch/ diversion drain
- Location and spacing of silt fences
- Frequency and location of water quality monitoring
- Maintenance requirements and frequency
- Maintenance access and
- Contingency measures in case of failure to achieve water quality objectives.

Mitigation of impacts on the Koala
The potential removal of up to 66 hectares of critical Koala habitat as assessed under the Guidelines is considered unlikely to impose a significant impact on the Koala for the following reasons:

- Overall, critical habitat on-site was given a lower level score of 6 using the Habitat Assessment Tool;
- It is anticipated that Deebing Creek will require rehabilitation to provide connectivity values through the landscape and ensure long-term habitat viability should Koalas be present.
- Dogs already utilise the site.
- The site is already heavily fragmented from other vegetation patches, and all adjoining properties are currently undergoing or proposed for urban development;
- No Koalas were observed on-site and SAT assessments indicated mostly Low usage of the site by Koalas suggesting Koala activity was perhaps transient;
- Vegetation clearing will be undertaken sequentially under the guidance of a fauna spotter-catcher. This will ensure that the potential for injury or death to Koalas, if present, as a result of clearing is minimised.

Summary
Each of the above mentioned management measures are specifically aimed at avoiding and reducing impacts on the natural environment as a result of the development. In particular, the use of a fauna-spotter catcher during clearing and construction phases will ensure that impacts to Koalas, if present, are avoided.

6 Conclusion on likelihood of significant impacts

6.1 Do you THINK your proposed action is a controlled action?

X	No, complete section 6.2
	Yes, complete section 6.3

6.2 Proposed action IS NOT a controlled action.

Response 6.2
The construction and operational phases of the proposed residential development are not considered to have a significant impact on *Matters of National Environmental Significance* (MNES) and as such, do not warrant a 'controlled action' determination. As detailed in this referral, no MNES are considered to be impacted by the proposal. In particular, the project is not considered to have a significant impact on Koalas as a result of the clearing of vegetation due to the following conclusions:

- Overall, critical habitat on-site was given a lower level score of 6 using the Habitat Assessment Tool;
- It is anticipated that Deebing Creek will require rehabilitation to provide connectivity values through the landscape and ensure long-term habitat viability should Koalas be present.
- Dogs already utilise the site.
- The site is already heavily fragmented from other vegetation patches, and all adjoining properties are currently undergoing or proposed for urban development;
- No Koalas were observed on-site and SAT assessments indicated mostly Low usage of the site by Koalas suggesting Koala activity was perhaps transient;
- Vegetation clearing will be undertaken sequentially under the guidance of a fauna spotter-catcher. This will ensure that the potential for injury or death to Koalas, if present, as a result of clearing is minimised.
- Multiple characteristics that reduce adverse effects to habitat critical to the survival of the Koala are evident suggesting that referral is not recommended.

Management measures will be imposed to ensure that injury to Koalas, if present, as a result of vegetation clearing is avoided or minimised. This will include the use of a fauna spotter-catcher during all stages of clearing and the implementation of sequential clearing to allow fauna to disperse away from clearing areas.

Given these factors, it is unlikely that the proposed action will have a significant impact on MNES and as such, is not considered to be a 'controlled action'.

6.3 Proposed action IS a controlled action

	Matters likely to be impacted
	World Heritage values (sections 12 and 15A)
	National Heritage places (sections 15B and 15C)
	Wetlands of international importance (sections 16 and 17B)
	Listed threatened species and communities (sections 18 and 18A)
	Listed migratory species (sections 20 and 20A)
	Protection of the environment from nuclear actions (sections 21 and 22A)
	Commonwealth marine environment (sections 23 and 24A)
	Great Barrier Reef Marine Park (sections 24B and 24C)
	A water resource, in relation to coal seam gas development and large coal mining development (sections 24D and 24E)
	Protection of the environment from actions involving Commonwealth land (sections 26 and 27A)
	Protection of the environment from Commonwealth actions (section 28)
	Commonwealth Heritage places overseas (sections 27B and 27C)

Response 6.3
NOT APPLICABLE

7 Environmental record of the responsible party

		Yes	No
7.1	**Does the party taking the action have a satisfactory record of responsible environmental management?** **Provide details** **Frasers Property** has been one of the country's leading property development companies for over 80 years, and until late 2014 was listed on the Australian stock exchange. Consistent with a company of this status, **Frasers Property** has in impeccable record of responsible environmental management. **Frasers Property** company details are listed on the company's webpage http://www.australand.com.au/	X	
7.2	**Has either (a) the party proposing to take the action, or (b) if a permit has been applied for in relation to the action, the person making the application - ever been subject to any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources?** **If yes, provide details**		X
7.3	**If the party taking the action is a corporation, will the action be taken in accordance with the corporation's environmental policy and planning framework?** **If yes, provide details of environmental policy and planning framework** **Frasers Property** environmental values, policy and planning frameworks, to which it adheres, are listed on the company's webpage: http://www.australand.com.au/About-Australand/Corporate-Social-Responsibility/Environment	X	
7.4	**Has the party taking the action previously referred an action under the EPBC Act, or been responsible for undertaking an action referred under the EPBC Act?** **Provide name of proposal and EPBC reference number (if known)** 1. Wonderland Business Park Precinct Stage 1, Lot B1 – EPBC 2004/1627 2. Wonderland Business Park Precinct Stage 1, Lot D1 – EPBC 2004/1626 3. Wonderland Business Park Precinct Stage 3 – EPBC 2006/2817 4. Australand Business Park – EPBC 2015/7513	X	

8 Information sources and attachments

(For the information provided above)

8.1 References

- **Australian Koala Foundation**, *The Spot Assessment Technique: determining the importance of Habitat Utilised by Koalas (Phascolarctos cinereus)*, available online

- https://www.savethekoala.com/sites/default/files/docs/conserve/The%20Spot%20Assessment%20Technique.pdf

- **Australian Koala Foundation** 2012, *National Koala Tree Protection List; Recommended Tree Species for Protection and Planting of Koala Habitat*.

- **Australian Soil Resource Information System**, http://www.asris.csiro.au/

- **Department of the Environment** 2015, *Protected Matters Search Report (03/11/2015 –* ***Attachment 1*****).**

- **Januchowski, McAlpine, Callaghan, Griffin, Bowen, Mitchel & Lunney** 2008, *Identifying mulitscale habitat factors influencing koala occurrence and management in Ballarat, Victoria, Australia*. ***Ecological Management and Restoration, 9(2): 134-142***.

- **McAlpine, Callaghan, Lunney, Bowen, Rhodes, Mitchell & Possingham** 2006, *Conserving Southeast Queensland Koalas: How much habitat is enough? In: Biodiversity Conference Proceedings (eds G. Siepen and D. jones), pp 11-17, University of Queensland, Gatton.*

- **Phillips & Callaghan** 2011, *The Spot Assessment Technique: a tool for determining localised levels of habitat use by Koalas Phascolarctos cinereus*. ***Australian Zoologist 35(3)****: 774-780.*

- **Saunders Havill Group** 2015, *Ecological Assessment Report EPBC Act Referral commissioned by* ***Frasers Property Australia*** *(****Attachment 2****).*

8.2 Reliability and date of information

Response 8.2
Refer to Response 8.1

8.3 Attachments

		✓ attached	Title of attachment(s)
You must attach	figures, maps or aerial photographs showing the project locality (section 1)	✓	Figure 1 – Site Context Figure 2 – Site Aerial 7812 Grampian Drive Shapefile
	GIS file delineating the boundary of the referral area (section 1)		
	figures, maps or aerial photographs showing the location of the project in respect to any matters of national environmental significance or important features of the environments (section 3)	✓	Figure 1 – Site Context Figure 2 – Site Aerial Attachment 1 – EPBCA Search Results Attachment 2 – Ecological Assessment Report Plan 2 – Habitat Fragmentation
If relevant, attach	copies of any state or local government approvals and consent conditions (section 2.5)	✓	Plan 1 – RVPDA Structure Plan
	copies of any completed assessments to meet state or local government approvals and outcomes of public consultations, if available (section 2.6)	-	-
	copies of any flora and fauna investigations and surveys (section 3)	✓	Attachment 2 – Ecological Assessment Report Plan 3 – Critical Habitat Impact Assessment
	technical reports relevant to the assessment of impacts on protected matters that support the arguments and conclusions in the referral (section 3 and 4)	✓	Attachment 2 – Ecological Assessment Report Attachment 3 – Draft Outcomes Based Conditions Plan 3 – Critical Habitat Impact Assessment
	report(s) on any public consultations undertaken, including with Indigenous stakeholders (section 3)	-	-

9 Contacts, signatures and declarations

Project title: Grampian Drive Deebing Heights

9.1 Person proposing to take action

1. Name and Title:	Scott Ullman – Development Director
2. Organisation:	This referral is made by **Australand Residential No. 150 Pty Ltd** on behalf **of Frasers Property Australia**
3. EPBC Referral Number:	NA
4: ACN / ABN:	107 356 418
5. Postal address	Level 3, 154 Melbourne St, South Brisbane, Qld 4101
6. Telephone:	07 3249 7422
7. Email:	Scott.ullman@frasersproperty.com.au
8. Name of designated proponent (if not the same person at item 1 above:	NA
9. ACN/ABN of designated proponent (if not the same person named at item 1 above):	NA
I qualify for exemption from fees under section 520(4C)(e)(v) of the EPBC Act because I am:	NA
If you are small business entity you must provide the Date/Income Year that you became a small business entity:	NA
I would like to apply for a waiver of full or partial fees under Schedule 1, 5.21A of the EPBC Regulations. Under sub regulation 5.21A(5), you must include information about the applicant (if not you) the grounds on which the waiver is sought and the reasons why it should be made:	NA

Declaration	I declare that to the best of my knowledge the information I have given on, or attached to this form is complete, current and correct. I understand that giving false or misleading information is a serious offence. I agree to be the proponent for this action. I declare that I am not taking the action on behalf of or for the benefit of any other person or entity.
Signature	 Date 16-12-15

9.2 Person preparing the referral information (if different from 8.1)

Name	Murray Saunders
Title	Director
Organisation	Saunders Havill Group Pty Ltd
ACN / ABN (if applicable)	24 144 972 949
Postal address	9 Thompson Street, Bowen Hills, QLD 4006
Telephone	(07) 3251 9415
Email	murraysaunders@saundershavill.com
Declaration	I declare that to the best of my knowledge the information I have given on, or attached to this form is complete, current and correct. I understand that giving false or misleading information is a serious offence.
Signature	 Date 16/12/2015